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ECONOMIC AND MANAGERIAL FACTORS UNDERLYING SUBSIDY NEEDS OF DOMESTIC TRUNK LINE AIR CARRIERS

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AFTER a postwar period of difficulties and losses, culminating in an industry net operating loss of almost $21,000,000 in 1947, the domestic trunk line air carriers have apparently rounded the corner. With an industry net operating income for 1949 of nearly $25,000,000 and with double that amount earned in 1950, the airline industry has glowed in a feeling of well being. Dividends are again being declared, new equipment is being ordered in increasing quantities, and the optimism reminiscent of the closing days of World War II is returning to the industry. Moreover, this change from the pessimistic days of 1947 is an industry phenomenon. In 1949, only two of the sixteen domestic trunkline carriers showed net operating losses and one of these had a profit when its international operations were taken into account. Reports for the first eleven months of 1950 show an even rosier prospect, with industry profits well up over 1949, although two of the sixteen domestic trunk airlines recorded net operating losses.

The extraordinarily good traffic in 1950, particularly in the summer and fall months, has, of course, been largely due to the defense program. During August of 1950, for example, every one of the domestic carriers was in the black, including even those carriers in the southeastern portion of the country for whom this month is ordinarily a low traffic and high loss month. Regardless of the effects of the high level of activity in 1950, brought on by the national emergency, the satisfactory level of more normal 1949 may seem to indicate that the domestic

airline industry has at long last crossed over into the ranks of American businesses characterized by financial stability, normal growth, and reasonable profits.

But can this conclusion be drawn from the apparent prosperity of the past two years? Is this prosperity real or does it rest in considerable part upon public subsidy? Without attempting to deal with any possible subsidy element involved in the provision of airways or in the financing of airports by public authorities,[1] it is interesting to ascertain what the results are with considerable or all of the air mail subsidy stripped away. While not determining what the air mail subsidy *should* be and whether the subsidy elements are community subsidies, or subsidies to the carriers, or to the air mail service, it is proposed to examine the financial and economic position of the domestic trunk line air carriers, after an adjustment for subsidies, the extent to which they have reached commercial maturity, and the factors which account for their situation. Suggestions will also be made as to the direction which public policy might take to meet the problems posed.

Under the Civil Aeronautics Act of 1938, the policy of the government with respect to mail pay is based upon underwriting revenue needs to enable carriers under honest, economical, and efficient management to contribute their part to the development of an air transport system adequate for the needs of commerce, the mail service, and defense of the nation. It is thus a policy of financial need, but a need dependent upon factors of economy and adequacy.

In approaching the problem of economic factors underlying subsidy needs of domestic trunk carriers, it must be assumed that the Civil Aeronautics Board, as the government agency charged with the development of a sound and economic air transportation system, is interested in (1) a domestic trunk airline system eventually self-supporting or (2) if that is not possible, a clear understanding as to how much of this industry is or can be self-supporting so that the remainder of the industry can be recognized as necessarily and economically subject to subsidy. The present program of the Senate Interstate and Foreign Commerce Committee to study means for separating subsidy elements in air mail payments and to draft legislation requiring separation, is a step in the direction of clarifying this problem. Proper separation of subsidy from service pay and the allocation of subsidies to communities will also serve to focus attention on the weakness of the domestic airline structure. But the separation of subsidy has no definite implications for the development of a governmental policy which will make possible the growth of a strong and economical airline system.

How Mail Payments Affect Airline Profits

For the purposes of analysis, it is assumed here that a compensatory (*i.e.*, non-subsidy) air mail rate would be one equivalent on the basis of

[1] These subsidies are often exaggerated by airline critics. Provision of airways is so necessary for national defense that the total expenditure involved probably would not be much less if there were no commercial airlines. Airlines are also paying a far greater share than is generally realized of airport facility costs.

weight to the return from passenger service. It can hardly be argued that, on a cost basis, the airlines should be entitled to more pay to handle the mail than they charge passengers, unless, of course, particularly on branch lines, the Post Office Department requires schedules primarily for the purposes of the mail. On the other hand, a fair mail pay would surely be considerably more than the amount charged for freight because of the special service and priority given to mail. In any case, until the matter of carrier cost of air mail service is determined, it seems reasonable to assume for purposes of analyzing the economic position of the carriers, that a service mail rate would be equal to the industry ton-mile return for passengers. On this premise, the service rate would have been 56 cents per ton-mile in 1950, 59.8 cents in 1949, and 52.3 cents in 1947, against an actual industry average mail pay of 101.3 cents in 1950, 110.2 cents in 1949, and 70.9 cents in 1947.

In table 1 there is presented the actual operating results, by airlines, for 1949 and adjusted results, assuming that all carriers had been paid on a mail rate basis equal to the industry average passenger return. This table, by removing most of the camouflage of air mail payments (even though it can well be argued that the *exact* amount of compensatory mail pay assumed cannot be supported by fact) shows some interesting results. Instead of only two carriers showing losses on their domestic operations, the number rises to 12 out of the 16 trunk line carriers, with only the so-called Big Four showing an operating income. Some carriers, like Capital Airlines, have their profit picture changed from one of a respectful net income to a large net loss. And, as might be expected, almost all of the smaller carriers show sizeable net operating losses.

Nor is the picture much improved in 1950. As table 2 indicates, the adjusted net income picture is greatly different from that before adjustment. Instead of a case of 14 of the 16 domestic carriers showing an operating profit, one finds only eight in the black after the mail pay adjustment, for this extraordinarily profitable period in American industrial history. Except for Northwest, whose losses are largely due to the exceptionally costly introduction of new airplanes, the striking change is again the case of Capital Airlines whose record turns from one of apparent success to one of the largest losses in the industry. While the first eleven months of 1950 depicts a more optimistic picture than for any period since World War II, it is still significant that probably no carriers other than the Big Four were in the black after mail pay adjustments, on a normal basis. In fact, the results for 1950 are of little real significance since the traffic demand after the start of the Korean hostilities reached abnormal proportions. Furthermore, even in 1950, only the Big Four earned, after mail pay adjustments, a healthy business profit.

In passing, it is interesting to note not only the dependence of three-fourths of the domestic trunk line carriers on mail pay, but the apparent lack of consistency and sense in the allocation of mail pay. Among the Big Four, there appears to be no valid reason why Eastern should

TABLE 1

NET OPERATING INCOME BEFORE AND AFTER MAIL PAY ADJUSTMENTS: 1949

DOMESTIC TRUNK AIRLINES

(Thousands of dollars)

	Operating Revenues Excl. Mail	*Mail Revenues*	*Total Operating Revenues*	*Total Operating Expenses*	*Net Operating Income*	*Actual Mail Revenue Per ton mile (cents)*	*Adjusted Mail Revenue**	*Adjusted Net Operating Income*
16 Trunk Lines	414,752	45,031	459,783	435,158	24,625	110.2	24,524	4,118
American	94,025	5,379	99,404	89,962	9,442	60.5	5,313	9,376
United	80,528	6,483	87,011	82,036	4,975	62.4	6,211	5,939
Trans World	57,991	5,720	63,711	61,115	2,596	65.1	5,254	1,930
Eastern	65,607	3,247	68,854	64,909	3,945	66.4	2,922	3,620
Northwest	24,398	2,963	27,361	28,542	(1,181)	116.6	1,520	(2,624)
Capital	22,339	4,567	26,906	25,587	1,319	428.2	638	(2,610)
Delta	13,513	2,385	15,898	15,191	707	264.8	539	(1,139)
Braniff	12,206	2,321	14,527	14,050	477	216.4	641	(1,203)
National	10,960	2,024	12,984	12,931	53	374.1	324	(1,647)
Western	6,996	1,863	8,859	8,379	480	414.4	269	(1,114)
Chicago & Southern	6,783	1,800	8,583	7,783	800	345.9	311	(689)
Midcontinent	6,048	1,467	7,515	6,975	540	468.1	187	(740)
Northeast	4,228	1,565	5,793	5,728	65	1,594.1	59	(1,441)
Continental	3,869	1,379	5,248	5,561	(313)	662.3	125	(1,567)
Colonial	3,219	1,226	4,445	4,229	216	1,223.3	60	(950)
Inland	2,042	641	2,683	2,178	505	546.7	70	(66)

* Adjusted on basis of revenue of $0.598 per ton mile, the industry passenger revenue return.

Source: C.A.B., *Recurrent Report of Financial Data.*

enjoy a higher return per ton mile than the other carriers. Although this may be explained by Eastern's lower volume of mail, present basic mail rates providing a sliding scale mail rate structure for the Big Four, the mail pay seems to have little relationship to costs or need. But the greatest disparities lie in the medium sized carriers. The comparison of Northwest and Capital is a case at point. Both carriers are approximately the same size, as measured by revenues, but Capital's mail rate came to approximately $4.28 per ton mile in 1949 and $2.87 in 1950, while Northwest's was $1.17 in 1949 and $1.18 in 1950. Yet Northwest's need was obviously greater with its costly introduction of Martin 202's and Boeing Stratocruisers. Capital's rate seems to be out of line with the rate received by the three other medium sized airlines – Delta, National, and Braniff – all of which could surely show equivalent need, at least in 1949.

In calling attention to the importance of air mail pay, it is not intended to argue against the wisdom of air mail subsidy. Even though it may be shown that the subsidies for the domestic trunk line carriers approximated $20,000,000 in 1949 and appeared to be running at the same rate in 1950, this may be a small price to pay for the development of a first class domestic air transport system with its contribution to national defense and the commerce of the nation. Its smallness becomes especially clear when we compare it with the $89,000,000 spent by the government to buy and store eggs during a similar period of time and the like millions spent on the support of prices for such articles as flaxseed, peanuts, and potatoes.

At the same time, there is much logic in the position of the Ameriran railroads that the transportation companies of this country should pay their way and that a sound transportation system depends upon the allocation of traffic in accordance with the relative economy and fitness of the carrying agencies. Moreover, even the most ardent supporters of the aviation industry wish to see the dead hand of subsidy removed from the air transport business and to see the industry come of age as a privately operated and financed segment of our business structure.

There may be little hope that such financial maturity will be reached among the feederline or local service airlines, and the existence of competition with foreign subsidized airlines may make the removal of subsidies difficult for the American Flag carriers. But the fact that at least four of the domestic trunkline carriers have operated for two years without air mail subsidy (no matter how this subsidy might be measured), gives one hope that an answer can be found whereby true trunkline service may be placed on its own feet.

It is proposed, therefore, in the following pages to analyze the underlying economic and managerial factors which have determined the profitability of the domestic trunk airlines, with a view to finding the factors which explain profit or loss. Can the explanation be found in size? In managerial efficiency and cost control? In equipment modernization? In route? In aggressiveness of management?

TABLE 2

NET OPERATING INCOME BEFORE AND AFTER MAIL PAY ADJUSTMENTS: FIRST 11 MONTHS, 1950

DOMESTIC TRUNK AIRLINES

(Thousands of Dollars)

	Operating Revenues Excl. Mail	*Mail Revenues*	*Total Operating Revenues*	*Total Operating Expenses*	*Net Operating Income*	*Actual Mail Revenue Per ton mile (cents)*	*Adjusted Mail Revenue**	*Adjusted Net Operating Income*
16 Trunk Lines	$433,198	$40.627	$473,825	$423,658	$50,167	101.3	$22,458	$31,998
American	98,214	5,183	103,397	83,894	19,503	59.7	4,862	19,182
United	80,880	6,413	87,293	74,358	12,935	60.0	5,985	12,507
Trans World	60,905	5,178	66,083	60,111	5,972	65.5	4,427	5,221
Eastern	66,936	2,973	69,909	63,662	6,347	67.5	2,466	5,840
Northwest	26,820	2,648	29,468	34,625	(5,157)	118.2	1,255	(6,550)
Capital	23,229	3,829	27,058	25,138	1,920	286.6	748	(1,161)
Delta	15,416	1,675	17,091	15,201	1,890	155.9	602	817
Braniff	12,285	2,023	14,308	12,461	1,847	176.1	643	467
National	13,580	1,604	15,184	13,106	2,078	274.1	328	802
Western	9,018	1,279	10,297	9,227	1,070	174.2	411	202
Chicago & Southern	6,659	1,609	8,268	7,574	694	301.9	298	(617)
Midcontinent	5,810	1,523	7,333	6,709	524	524.3	163	(836)
Northeast	4,483	1,384	5,867	5,709	158	1,319.4	59	(1,167)
Continental	4,018	1,604	5,622	5,327	295	895.6	100	(1,209)
Colonial	2,782	1,048	3,830	4,206	(376)	1,258.1	47	(1,377)
Inland	2,163	654	2,817	2,350	467	574.2	64	(123)

* Adjusted on basis of $0.56 per ton mile, the industry average passenger return.

Source: C.A.B., *Recurrent Report of Financial Data* and reports filed by carriers with Board and reported in *American Aviation.*

Costs and the Economics of Size

Because the four airlines which seem to have found the formula for profitable operation are the Big Four, it may very easily be assumed that the economics of size account for airline success. In the very nature of airline business, with the apparent tendencies toward lower costs with large scale operations in such important cost elements as maintenance, and with the possibilities of spreading indirect expenses with high volume, it would seem that the economics of size should be of tremendous significance.

In order to obtain some size classifications, the sixteen domestic trunk airlines have been divided into groupings on the basis of 1949 gross revenues, available ton miles,[2] revenue ton miles and average route miles operated. These size groupings are shown in Table 3. As will be noted, there is a surprising variation in the size of the sixteen domestic trunk airlines. The Big Four are definitely in a size class by themselves and the next two largest airlines, Northwest and Capital, are approximately one-third of the average size of the Big Four as measured by revenues or available ton miles. The medium small airlines (Delta, Braniff, and National) and the small airlines (Western, Chicago and Southern, and Midcontinent) are approximately one-fifth and one-ninth, respectively, of the average of the Big Four. And the four small-

TABLE 3
Comparative Size Groups: 1949
Domestic Trunk Airlines

	Gross Revenues (000,000's)	*Adjusted* Gross Revenues* (000,000's)	*Available Ton Miles* (000,000's)	*Revenue Ton Miles* (000,000's)	*Average Route Mileage*
Large					
American	$99.4	$99.3	323.1	192.1	6,512
United	87.0	86.7	284.1	162.8	7,088
Trans World	63.7	63.2	196.6	115.9	5,325
Eastern	68.9	68.6	261.3	120.6	6,018
Medium					
Northwest	27.4	25.9	93.2	49.7	4,003
Capital	26.9	23.0	90.9	44.8	4,132
Medium Small					
Delta	15.9	14.1	53.1	23.7	3,065
Braniff	14.5	13.8	46.1	22.3	3,212
National	13.0	11.3	52.6	19.7	2,301
Small					
Western	8.9	7.3	26.3	13.1	2,709
Chicago & Southern	8.6	7.1	23.5	12.0	2,539
Midcontinent	7.5	6.2	20.0	10.5	2,846
Very Small					
Northeast	5.8	4.3	12.9	6.1	1,053
Continental	5.3	4.0	16.8	7.1	2,308
Colonial	4.4	3.2	11.1	5.3	1,024
Inland	2.7	2.1	5.65	3.3	1,539

* Adjusted for mail pay differences. See Table 1.

[2] "Available ton miles" is the measurement of the number of tons of weight available for revenue use multiplied by the number of miles this available weight is carried. It is probably the best single measurement of size, since it is, in effect, the total "production" of the airline plant, as actually operated. As will be noted below, it is an especially good datum against which to measure costs.

est airlines of the sixteen average little better than one-twentieth the size of the four largest.

This is, indeed, a wide disparity in size and would seem to indicate that only with an airline system of large companies could the public expect financial self-sufficiency now apparently enjoyed by the Big Four. But, strangely enough, the evidence does not support the supposition that the self-sufficiency of the Big Four is due to the economies of size.

Reference to tables 4 and 5 show some interesting facts with regard to operating expenses. On the basis of total operating expenses per available ton mile, there is little to choose between the four largest airlines, the two medium sized airlines, and the three medium small airlines, although the three small airlines show somewhat higher costs and the four very small airlines have rather noticeably higher costs. It is interesting that National Airlines has the lowest cost per available ton mile of all sixteen airlines even though it ranks ninth in size among the domestic carriers and is less than one-sixth the size of American as measured in available ton miles or revenues. Moreover, two of the smaller airlines, in addition to National, Capital and Delta have costs below those of two of the four largest.

There is even less correlation between size and cost when one considers direct flying costs.[3] In this case, one of the smallest airlines (Continental) compares favorably with one of the largest (Trans World). While, on the basis of averages, inspection of the data in Table 4 will show that size has some advantage in direct expenses as well as in indirect expenses, the exceptions, such as Delta and National, seem to indicate that size has not really been the explanation for the financial self-sufficiency of the Big Four.

In order to see this matter of costs more clearly, break-even load factors have been computed (see Table 4) and some detail of major classes of operating expenses are summarized in Table 5. In order to make the breakeven load factors have some meaning from the standpoint of reflecting efficiency of management and operations, the actual breakeven load factor[4] has been adjusted to give effect to differences in mail rates and in passenger returns per passenger mile. For the purpose of equating the effects of mail rates, the breakeven load factor of each airline has been computed on the assumption of a mail rate equal to the industry return for passenger service. To eliminate differences in passenger fare levels (some of which grow out of route and competitive factors which have nothing to do with efficiency) a break-

[3] Those costs generally variable with the volume of flying, although actually most variable with hours of flying rather than miles. They include the cost of flying operations, direct equipment maintenance, and aircraft depreciation.

[4] The actual breakeven load factor is that percentage of revenue utilization of available ton miles which will just pay for expenses of operation. Clearly, the breakeven load factor depends not only upon the level of expenses, but also the rate at which the revenue ton miles are sold. Consequently, the level of mail rate will affect the breakeven point, as will the level of passenger rates, as well as other service rates, *and* the relative proportion of high and low rate service sold.

TABLE 4

ANALYSIS OF OPERATING EXPENSES AND BREAKEVEN LOAD FACTORS: 1949
DOMESTIC TRUNK LINE CARRIERS

	Operating Expenses Per Available Ton Mile			*Ratio of Indirect to Direct*	*Actual Total Load Factor*	*Actual Breakeven Load Factor*	*Breakeven Load Factor Adjusted for Mail**	*Breakeven Load Factor Adjusted for Mail and Passenger Returns***
	Direct (cents)	*Indirect (cents)*	*Total (cents)*	*(percent)*	*(percent)*	*(percent)*	*(percent)*	*(percent)*
Sixteen Trunk Airlines	13.8	14.9	28.7	108	53.4	50.5	52.9	52.9
American	13.4	14.5	27.9	108	59.4	53.8	53.8	52.7
United	13.3	15.7	29.0	117	57.3	54.0	54.3	53.8
Trans World	15.1	16.0	31.1	106	58.4	56.7	57.2	56.2
Eastern	13.1	11.8	24.9	90	46.2	43.5	43.8	46.1
Northwest	14.4	16.2	30.6	113	53.3	55.6	56.7	53.8
Capital	13.3	14.9	28.2	112	49.3	46.9	54.9	52.6
Delta	13.4	15.2	28.6	114	44.6	42.6	48.2	50.0
Braniff	15.0	15.5	30.5	105	48.2	46.7	52.8	53.0
National	12.7	11.9	24.6	94	37.5	37.5	43.0	45.0
Western	15.5	16.3	31.8	106	49.5	46.8	56.9	57.3
Chicago & Southern	14.2	18.9	33.1	133	51.0	46.3	56.0	57.3
Midcontinent	15.2	19.8	35.0	130	52.5	48.7	55.6	56.0
Northeast	22.1	22.3	44.4	101	47.0	46.4	62.7	70.1
Continental	15.3	17.8	33.1	117	42.8	45.4	59.6	56.8
Colonial	17.8	20.3	38.1	114	47.6	45.3	61.4	65.5
Inland	16.4	22.1	38.5	135	58.6	47.6	60.4	65.5

* Adjusted to reflect a basic mail rate equal to average passenger ton-mile return. See Table 1.

** Adjusted to reflect basic mail rate as well as differences in passenger returns, by calculating breakeven load factor on assumption all carriers had collected average industry passenger return of 5.76 cents per mile.

even load factor has been computed on the basis of the industry's average passenger return, as well as with the mail pay adjustment.

The calculation of breakeven load factors, as adjusted for mail pay and passenger return differences, shows that there is no perceptible difference between the efficiency of the Big Four and the next five medium and medium small airlines. As a matter of fact the adjusted breakeven load factors of the latter five airlines is, on the average, slightly *lower* than the average of the Big Four. This is a surprising fact, particularly when it is considered how much smaller these five are than the four large leaders of the industry. It tends to prove either that airlines of the size of Delta, National, or Braniff are large enough to gain the economies of size in the industry, or that the managements of the medium sized airlines have been forced by circumstances to be more efficient than their big competitors, or, what seems most likely, that both factors account for the difference.

Further analysis of operating expenses has been made to determine the effect of size upon the economics of air transport services. The major expense classifications of the sixteen domestic trunk operators have been reduced to expenses per available ton mile and summarized in Table 5. On the basis of the nature of the airline business, one would expect the economies of size to be most evident in the case of direct maintenance of flight equipment, ground operations expense, traffic and advertising expense, and general and administrative expense.

Of all airline operations, the direct expense incurred in the maintenance of equipment is most like the manufacturing process in which the economies of size have been so pronounced. Of course, there are many custom type maintenance operations, but the overhaul of airframe, engines, and the other components of the airplane, of which approximately one-half of direct maintenance costs are comprised, is apparently best undertaken on a mass production basis. Moreover, many of the routine maintenance operations would seem to lend themselves to cost reduction through large scale operations.

As for ground operations expense, in which are included the cost of station operations and like expenses, there would seem to be distinct advantages in the case of the larger size operations, particularly where high traffic volume can make possible the distribution of these expenses to many available ton miles. Traffic and advertising expenses would likewise appear to be a type of cost which would be lower, on an available ton mile basis, for the larger companies than for the smaller. And general and administrative expenses, covering largely the costs of the general offices, would seem to be particularly susceptible to the economies of size.

In examining direct equipment maintenance expenses for 1949, one finds no particular evidence of the effect of economies of size. This

TABLE 5

ANALYSIS OF OPERATING EXPENSES: PRINCIPAL EXPENSE CLASSES: 1949
DOMESTIC TRUNK LINE CARRIERS
CENTS PER AVAILABLE TON MILE

	Flying Operations	*Direct Maintenance Flight Equipment*	*Depreciation Flight Equipment*	*Total Direct Operating Expense*	*Ground Operation*	*Ground & Indirect Maintenance*	*Passenger Service*	*Traffic Sales & Advertising*	*General and Administration*	*Depreciation Ground Equipment*	*Total Indirect Operating Expense*	*Total Operating Expense*
Sixteen Trunk Lines	7.9	3.3	2.6	13.8	4.4	2.2	1.9	3.9	2.0	0.5	14.9	28.7
American	7.3	3.5	2.6	13.4	4.4	2.3	1.8	3.6	1.9	0.5	14.5	27.9
United	7.3	2.7	3.3	13.3	4.4	2.4	2.0	3.7	2.4	0.8	15.7	29.0
Transworld	9.2	3.4	2.5	15.1	4.2	2.3	2.2	4.8	2.1	0.4	16.0	31.1
Eastern	7.3	3.4	2.4	13.1	3.5	1.6	1.4	3.3	1.7	0.3	11.8	24.9
Northwest	8.5	3.2	2.7	14.4	4.5	3.2	1.8	4.0	2.1	0.6	16.2	30.6
Capital	8.1	3.5	1.7	13.3	5.4	1.6	1.6	4.3	1.6	0.4	14.9	28.2
Delta	8.1	3.3	2.0	13.4	4.5	1.9	2.0	4.4	2.0	0.4	15.2	28.6
Braniff	8.4	4.2	2.4	15.0	5.0	2.2	2.0	4.0	1.9	0.4	15.5	30.5
National	6.6	4.0	2.1	12.7	3.5	2.0	1.3	3.3	1.5	0.3	11.9	24.6
Western	8.9	2.5	4.1	15.5	4.8	2.1	1.6	4.3	2.7	0.8	16.3	31.8
Chicago & Southern	8.7	3.7	1.8	14.2	6.6	2.4	2.5	4.6	2.3	0.5	18.9	33.1
Midcontinent	10.0	2.4	2.8	15.2	6.6	2.2	2.1	5.6	2.7	0.4	19.8	35.0
Northeast	11.4	5.3	5.4	22.1	6.6	4.1	2.2	5.6	3.0	0.8	22.3	44.4
Continental	9.6	3.1	2.6	15.3	5.4	3.0	1.9	3.8	3.0	0.7	17.8	33.1
Colonial	10.4	5.0	2.4	17.8	5.6	3.0	2.8	4.5	4.1	0.3	20.3	38.1
Inland	13.2	2.9	1.3	16.4	8.5	2.9	2.6	3.9	3.7	0.5	22.1	38.5

Source: Calculated from Civil Aeronautics Board Data, *Recurrent Report of Financial Data and Recurrent Report of Mileage and Traffic Data.* Covers both scheduled and nonscheduled revenue operations.

startling fact, as measured by expense per available ton mile may be summarized as follows:

	Number of Carriers Below or Equal to the Industry Average	*Number of Carriers Above the Industry Average*
Large carriers	1	3
Medium size carriers	1	1
Medium small carriers	1	2
Small carriers	2	1
Very small carriers	2	2

The record is even more interesting when it is noted that in 1949 the three lowest cost carriers included United, a large carrier, and Midcontinent and Western, relatively small carriers. While some explanation for the cost differences in the direct maintenance expense category can be traced to problems with new equipment, this is not believed to be a significant factor. Western and United had Convairs or DC-6's in operation. Yet their costs were among the three lowest. Midcontinent, the lowest cost operator, had, to be sure, only DC-3's in operation in 1949. Yet Colonial, so far as its domestic operations were concerned, operated DC-3's almost exclusively in 1949 and had the highest cost per available ton mile. Other comparisons could be made. In the industry, the low cost operators are "explained away" by some of their higher cost competitors on the basis of accounting differences, claiming that many direct expense items are hidden away in the indirect expense categories. But analysis of accounts do not support the thesis and one must look to other explanations. While, as will be noted presently, trip distances have a material effect on all direct operating expenses per available ton mile, the fact that no real evidence of the economies of size are found in direct maintenance operations and that such wide differences are found must be ascribed to the quality of management over these operations. The statistical evidence is further supported by inspection and knowledge on the part of the writer who is well aware that good management and the provision of efficient facilities (likewise an evidence of good management) largely explain the maintenance cost records of such carriers as Midcontinent, Western, United, and Continental.

The advantages of size tend to show more positively in the case of ground operations expense. Classifying the carriers, as was done with direct maintenance, one finds the following:

	Number of Carriers Below or Equal to the Industry Average	*Number of Carriers Above the Industry Average*
Large carriers	4	0
Medium size carriers	0	2
Medium small carriers	1	2
Small carriers	0	3
Very small carriers	0	4

Although the above summary appears to be rather definite evidence of the economies of size in this important classification of expenses (which accounted for 15 per cent of all airline expenses in 1949), reference to table 5 will show that, in the medium and medium small carrier categories, many of those carriers above the industry average were only very slightly above.

It might be expected that the economies of size apparent in ground operations expense would be due not so much to the size of the airline itself but rather to the density of operations. Using the number of available ton miles flown per station operated, as an index of the density of operations in 1949, table 6 shows that, as a general rule, the higher the density of operations, the lower the cost of ground operations per available ton mile. There are, to be sure, some noteworthy exceptions. The exceptionally good record of National and the almost as good record of Delta, Western, Continental, and Colonial are somewhat out of line with the general trends. But the trend is distinct enough to indicate that the real economies of size are matters of density, rather than mere size of the total operations; and density is, of course, largely a matter of route structure although it tends to be affected also by the aggressiveness of management in offering a quantity and quality of service and through effective selling. When the wide differences in density of operations is considered one cannot help but wonder that some of the low density operators can keep their ground

TABLE 6

GROUND OPERATIONS EXPENSE AND DENSITY OF OPERATIONS: 1949
DOMESTIC TRUNK LINE CARRIERS

	Available Ton Miles Per Station Served (000,000's)	*Ground Operations Expense Per Available Ton Mile* (*cents*)
Large Carriers		
American	5.1	4.4
United	4.2	4.4
Trans World	4.0	4.2
Eastern	3.6	3.5
Medium Carriers		
Northwest	2.8	4.5
Capital	1.8	5.4
Medium Small Carriers		
Delta	1.6	4.5
Braniff	1.6	5.0
National	1.8	3.5
Small Carriers		
Western	1.5	4.8
Chicago & Southern	1.1	6.6
Midcontinent	0.7	6.6
Very Small Carriers		
Northeast	0.6	6.6
Continental	0.5	5.4
Colonial	0.6	5.6
Inland	0.4	8.5

operations costs so low and that some of the very high density operators should have costs as high as they are.

Review of traffic, sales, and advertising expenses shows in all size classes rather little deviation from the industry average, although there are noteworthy cases of Trans World, Midcontinent, and Northeast which are distinctly out of line on the high side in their respective classes, and Eastern, National, Continental and Inland, which are out of line on the low side. This group of expenses which account in the industry for more than 15 per cent of all air line expenses appears to be more variable with managerial policy than with size, although this policy may be determined by route considerations and competitive factors which are examined below.

Analysis of general and administrative costs (see table 5) shows little difference between the four largest airlines and the five medium sized and medium small airlines, so far as any expected economies of size are concerned. This is somewhat surprising as one should normally expect the larger airlines to have a materially lower general and administrative cost per available ton mile than such airlines as National or Braniff, whose volume of operations is less than one fifth the average of the Big Four. It is not surprising that in the case of the small and very small carriers the general and administrative expenses per available ton mile should be higher. On the contrary, it is remarkable that these costs should not be higher than they are.

Like maintenance expenses and the over-all picture of operating expenses, analysis of general and administrative expense statistics seems to indicate that (1) there are few economies of size beyond the size of those airlines which have been here classified as medium small; and (2) for airlines of lesser size the diseconomies of smallness tend to show up rather rapidly. While the statistics *seem* to mean this, there is some doubt that it is wholly true. It does seem to be clear that the small and very small carriers are so caught in the costs of small size that despite good management and sound policy (e.g. Western's and Midcontinent's record on maintenance) they are doomed to experience the few extra cents cost per available ton mile which amounts to so much in a year's operations.

The lack of difference between the operating costs of the Big Four and those of the next five carriers in size (and the size of these five, as has been pointed out, is much less than that of the Big Four) is unconvincing. From the standpoint of size, there *should* be greater differences in cost. After all, even the larger airlines are not large as American business enterprises go. Using revenues as a basis, they are small compared to railroads and to most of the well known industrial enterprises. Moreover, the fact that noteworthy cost records have been made by some of the smaller carriers leads one to the belief either that there are more important factors than size which determine airline costs or that the quality of management varies more widely than is sometimes supposed.

Effect of Trip Distance on Costs

Among the other main determinants of cost which have not been examined are trip distances. Most direct operating expenses tend to vary with airplane *hour* operating costs and the average speed of airplanes tends to vary inversely with trip distance so that, with a given airplane, the available ton miles produced per hour will be greater the longer the trip distance. For example, in 1949, United Airlines operated their DC-6 airplanes at an average direct operating cost of approximately 80 cents per airplane mile with an average trip distance of almost 600 miles. Because of the importance of speed over trip distances (approximately 250 miles per hour average from take-off to landing for 600 miles and 202 miles per hour for a 200 mile distance), it is estimated that, had United operated these airplanes over a 200 mile average trip distance, the cost per airplane mile would have risen to approximately $1.00. And the cost per available ton-mile which was approximately 10.7 cents at a 600 mile distance would have been 13.3 cents at a 200 mile distance. Further calculations indicate a cost of 16.7 cents per available ton mile with a 100 mile trip distance.

In view of the wide variation in direct operating costs per available ton mile with increasing trip distances, it might be well to examine the 1949 experience with this in mind although utilization of different

TABLE 7

Effect of Trip Distance on Direct Operating Expense: 1949
Domestic Trunk Line Carriers

	Average Trip Distance (Miles)	*Actual Direct Operating Expense Per Available Ton Mile (cents)*	*Direct Operating Expense Using DC-6 Cost Curve as Basis (cents)*	*Direct Operating Expense Using DC-3 Cost Curve as Basis (cents)*	*Direct Operating Expense Using Average of DC-6 and DC-3 Cost Curves as Basis (cents)*
Sixteen Domestic Carriers	178	13.8	13.8	13.8	13.8
American	241	13.4	12.9	13.3	13.1
United	258	13.3	12.7	13.3	13.0
Trans World	250	15.1	12.8	13.3	13.0
Eastern	178	13.1	13.8	13.7	13.8
Northwest	245	14.4	12.9	13.3	13.1
Capital	146	13.3	14.6	14.2	14.4
Delta	147	13.4	14.6	14.2	14.4
Braniff	168	15.0	14.0	13.8	13.9
National	181	12.7	13.8	13.8	13.8
Western	185	15.5	13.7	13.7	13.7
Chicago & Southern	180	14.2	13.8	13.8	13.8
Midcontinent	151	15.2	14.5	14.1	14.3
Northeast	89	22.1	17.5	15.8	16.7
Continental	158	15.3	14.3	14.0	14.2
Colonial	129	17.8	15.3	14.5	14.9
Inland	144	16.4	14.7	14.2	14.6

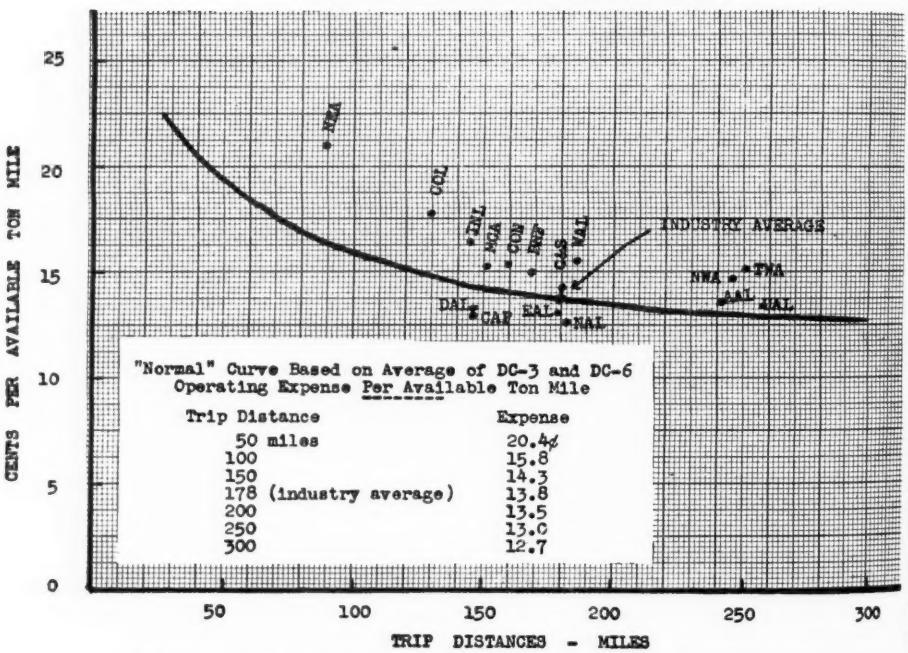
Note: Curve for DC-6 and DC-3 made to pass through industry average.
Source: Calculated from wheels-off wheels-on speeds actually experienced by airlines and reported to Civil Aeronautics Board in Form 41.

types of equipment will tend to cloud the basic effects of trip distances. The data on direct operating expense by carriers and the average trip distances flown in 1949 are shown in table 7. In order to gain some perspective on these trip distances and their effect, the expected cost per available ton-mile has been calculated by using (1) the industry direct operating expense average as the basis and (2) the slope of the DC-6 and the DC-3 operating costs as affected by distance and average speed. Since the aircraft being utilized by the domestic carriers probably, on the average, approximates a fleet half of DC-6's and half of DC-3's, expected operating costs per available ton mile are computed using an *average* of the expectable costs of these two airplanes as a basis. These costs are charted on Chart 1.

CHART I

EFFECT OF TRIP DISTANCES ON DIRECT OPERATING EXPENSES
DOMESTIC TRUNK LINE CARRIERS: 1949

Comparison of Actual with Expected Normal



While the so-called "expected normal" on Chart 1 cannot reflect individual differences in efficiency, size, weather, gasoline prices, equipment utilization and other factors, it does serve to show the extent to which trip distance enters direct operating expenses and the apparent extent to which individual companies are below or above the normally expectable industry average. The data in table 7 show also how route structure tends to affect costs. The low average trip mile of many of the carriers is almost entirely determined by route, and the deviation

from expected "normal" of certain carriers like Northeast and Colonial is partly due to route limitations which make it difficult to utilize equipment as fully as possible.

The true importance of trip length in its effect on costs is sometimes buried in averages. American, for example, scheduled its Convairs with an average trip length of approximately 140 miles early in 1950. Had this company been able to reschedule these airplanes to increase trip distance by approximately 20 miles or a 14 per cent increase, the savings on an annual basis are roughly estimated to be well over $500,000. And could a small airline like Midcontinent improve its scheduling, either through revision of route or through revision of current scheduling practice, to reach the industry average (i.e. from 151 miles to 178 miles), it is estimated that expenses for the same available ton miles as flown in 1949 would have been reduced by more than $100,000. Such low trip mileages as Northeast's average of 89 miles in 1949 appear to be hopeless, this factor alone, overlooking effects on utilization of equipment, accounting for an estimated 26 per cent higher direct operating expense as against what would have been encountered had this airline been able to schedule to the industry average of a 178 mile trip distance.

The Level of Indirect Costs

A further cost factor, in part related to size and in part related to the efficiency of management, might be noted. It is the level of indirect costs, generally measured by the ratio of indirect to direct expenses. Data reflecting this ratio may be found in table 4. The lowness of the ratio of indirect expenses to direct expenses accounts very largely for the financial success throughout the years of Eastern Airlines and to a considerable degree for the cost record of National. Likewise, the relative highness of indirect costs account for United's somewhat poorer profit showing in 1949 as compared to American. If *direct* operating expenses are at a reasonable level, this ratio shows much by way of efficient management and control of indirect costs. Where direct expenses are high, as in the case of Northeast, a low ratio has little real meaning. However, assuming a reasonable direct expense level, it would appear that no airline should be satisfied with an indirect expense level above 100 per cent of direct and a 95 per cent level appears entirely feasible, as is indicated by the experience of Eastern and National. It is an interesting commentary that had all the airlines been able to realize Eastern's indirect expense ratio, even with the somewhat high direct expenses in certain instances, eleven of the sixteen would have made a net operating profit in 1949, even though a mail rate equal to the passenger return had been paid.

There is hardly any question that the indirect expense ratio should be lower with a higher volume of operations. The record for 1949 shows that this is generally true. Most of the 12 medium and small

airlines have an indirect expense ratio higher than the industry average and all but one of the Big Four have a ratio equal to or lower than the industry average. There are exceptions among the smaller carriers where the ratio is low, as in the case of National, Braniff, and Western; and United in 1949 was the exception among the Big Four (although it must be recognized that Trans World's actual indirect expense per available ton mile was somewhat higher than United's, as one would expect with that airline's lower volume of operations). The management position of United has been, however, that a higher level of indirect expenses is justified on the basis of the additional revenue which higher expenses generate. As compared to Eastern or American, United's somewhat higher expenses for passenger service, sales and advertising, and general and administrative costs account in large part for the differences. The extra expenditure may well pay off in higher passenger load factors and the record seems to support the policy for United enjoyed in 1949 the highest passenger load factor in the industry. Additional cost differences lie in ground and indirect maintenance and depreciation of ground equipment. United has probably the finest maintenance facilities in the industry which might account for some of these increased costs and for that company's low direct maintenance record. Yet with all this justification, the higher volume lower cost operation of American paid off better than United's policy as is indicated by the higher net operating income enjoyed by American.

Financial Self-Sufficiency and Route Characteristics

Even though the Big Four represent financial maturity and self-sufficiency for the airlines, as their 1949 and 1950 records appear to indicate, the answer to economic health for the other twelve carriers does not seem to lie on the side of costs or the economics of size.[5] There is, to be sure, some evidence that at least four and perhaps as many as seven of the smallest airlines are doomed to indefinite subsidy because of the expense level which their size, shortness of haul, and low density of operations generate. But one is struck by the fact that the medium sized and medium small airlines do practically as well, from the point of view of costs, as the Big Four. Still, all except the Big Four showed losses in 1949, after high mail payments were stripped away, and the record for abnormal 1950 is not much more encouraging, when a reasonable rate of profit return is considered.

Therefore, the answer must be found in the revenue side of the airline picture for these airlines which can and have turned in a creditable cost performance. One does not have to look far. Examination of actual and breakeven (after mail pay adjustment) load factors

[5] Similar conclusions were reached in the study by F. W. Gill and G. L. Bates, *Airline Competition* (Boston: Harvard University Graduate School of Business Administration, 1949), pp. 616-18. Unlike the study of Gill and Bates, this study concludes, as is shown below, that the problem is not carrier competition *per se* but rather the size and character of the market facing those carriers with inadequate routes.

shown in table 4 will prove that, in 1949, *every* airline except the very small four airlines would have made a profit, after mail pay adjustment, if they had enjoyed the load factors experienced by American, United or Trans World. Even one of the very smallest airlines, Continental, would have come very close to breaking even with American's load factor. However, had all the carriers enjoyed a load factor only equal to Eastern's, National alone, in addition to Eastern, would have been in the black. But in the case of Eastern and National, as has amply been shown, their advantage is primarily one of low costs even though their above-the-industry average passenger fare level in 1949 was of some assistance.

Why is it that three of the Big Four have gained their success through high load factors? The answer must be found in route characteristics, the quality and volume of service, or successful sales effort.

A fairly accurate guide to the traffic potentials of each of the domestic trunk line routes can be obtained from the traffic surveys made each March and September by the Civil Aeronautics Board.[6] While these surveys cover only passenger traffic and have been made for only these two months each year, they do serve to show the flow of airline traffic. These surveys, to be sure, cover only the actual traffic handled and are not necessarily a good guide to *potential* traffic which is influenced by the quality and quantity of airline operations and other factors, such as safety, reliability and fare level which affect the volume of airline service generally.

The best guide for determining the strength of an airline route is the volume of traffic available between pairs of cities. The Civil Aeronautics Board Survey for March, 1949, covered traffic to and from 430 domestic cities having airline traffic between 15,532 pairs of cities. While some of these cities and pairs were served by the local service airlines, most were served by the sixteen domestic trunk line carriers studied here and by far most of the traffic handled was carried by these major carriers. Data from the September, 1948 and March, 1949, surveys have been summarized in tables 8 and 9. The importance of relatively few cities is striking. Of the 430 cities surveyed in March, 1949, ten of these cities generated 53 per cent of the domestic airline passenger miles and 100 of these cities generated 93 per cent of the passenger miles. Of the 15,532 pairs of cities surveyed, 100 pairs handled 47 per cent of the passenger miles. Thus, it appears reasonable to conclude that an airline route with the highest number of these major cities or pairs of cities is likely to have the highest density of traffic, the largest volume, and the highest average load factors.

Table 8, dealing only with the intercity route passenger traffic of the domestic trunk line carriers over the top 100 pairs of cities in September, 1948, and March, 1949, shows, as might be expected, the

[6] Civil Aeronautics Board, *Airline Traffic Survey* (Washington: Sup't of Documents).

TABLE 8

PASSENGER MILE POTENTIAL OF DOMESTIC TRUNK LINE AIR CARRIER ROUTES
AS MEASURED BY INTERCITY ROUTE TRAFFIC OF TOP 100 RANKING PAIRS OF CITIES
C.A.B. AIRLINE TRAFFIC SURVEYS FOR SEPTEMBER 1948* AND MARCH 1949** COMBINED.

	Average Number of Top 100 Pairs Served	*Total Passenger Miles of Pairs Served* (000,000's)	*Potential to Airline Based on Equal proration* (000,000's)	*Average Number of Carriers Serving Pairs*	*Actual total Passenger Miles of Carriers in Two Survey Months* (000,000's)	*Ratio of Actual Passenger Miles to Prorated Potential*
American	44.5	269.5	115.9	2.3	248.6	2.15
United	36.5	256.9	100.5	2.5	205.4	2.04
Trans World	30	207.9	83.1	2.5	143.6	1.74
Eastern	22	143.8	82.2	1.8	174.3	2.12
Northwest	10	40.8	23.1	1.8	53.5	2.31
Capital	10.5	72.9	23.3	3.1	48.3	2.07
Delta	4.5	18.4	9.9	1.9	36.2	3.66
Braniff	5	12.3	7.1	1.7	32.8	4.62
National	6	49.4	26.7	1.8	25.4	0.95
Western	6.5	17.3	17.3	2.3	18.4	1.06
Chicago & Southern	2.5	5.8	3.1	1.9	18.5	6.00
Midcontinent	1	1.8	0.9	2.0	17.0	18.89
Northeast	1	17.6	5.9	3.0	9.7	1.64
Continental	..	....	....	..	10.6	...
Colonial	1	5.8	2.9	2.0	7.8	2.69
Inland	..	....	....	..	4.5	...
Total of Pairs	97	502.8				
Total Potential all pairs		1,113.9			1,054.6	2.10

* Note: Only 98 of the 100 pairs included in tabulations since other pairs not served by single carrier in a month.
** Note: Only 96 of the 100 pairs included in tabulations since other pairs not served by single carrier.

overwhelming route strength of the Big Four airlines and the great route weakness of such carriers as Continental, Midcontinent, and Inland. By arbitrarily allocating actual traffic among carriers on an equal basis, one obtains not only a prorated potential but also a competitive factor as disclosed by the average number of carriers serving each route. While the traffic of the top 100 pairs only covers 47 per cent of the total traffic, the importance of this top 2/3 of 1 per cent of the pairs is extraordinarily great to the route productivity of an airline.

The average number of carriers serving these top pairs is of significance. The strength of Eastern's route, among the Big Four, becomes apparent when it is noted that this airline has less competition over its route than any of the largest airlines; in fact, less competition than any of its competitors. Likewise, the weakness of Capital's and Northeast's route is alo partly apparent when one finds an average of three carriers serving their most productive route segments. Based on an equal proration of traffic handled over the 100 pairs, the strength of National's route appears to be greater than has generally been realized. For the survey months covered, one finds National's route to stand, in terms of potential, as fifth in the nation and with a very low competitive factor of 1.8. The extraordinary weakness of Continental's and Inland's routes, without a single pair of cities in the top 100, doubtless accounts to a great extent for the low load factors and traffic densities which these carriers have.

To obtain a clearer picture of the relative route strengths of the various carriers, the distribution of the cities and pairs of cities by size groups has been made and summarized in table 9. The distribution of the pairs of cities in the top 100 pairs brings out even more sharply the traffic strength of the routes of the Big Four. Likewise it discloses the weaknesses of the smallest four and the small and medium small airlines. Except for Northeast's Boston-New York segment and Colonial's New York-Montreal route, none of the six smallest airlines have any of the top 50 pairs of cities on their routes.

Although the traffic generating ability of cities on an airline's route is of far less importance than the linking up of strong traffic generating cities (e.g. it is of far less significance for an airline to serve a city than to serve that city and another between which passengers wish to travel), some weight must be attached to the kind of traffic generation cities an airline has on its route. As will be noticed from table 9, both American and United have on their routes 8 of the top 10 cities of the country which generated 53 per cent of the passenger miles in March, 1949. Of the top 100 traffic generating cities, the routes of American and Eastern are noteworthy, as is the fact that Capital has more of these cities than Trans World and almost as many as United. However, as will be recalled from table 8, Capital does not have the strong *pairs* of cities and has a higher degree of competition over its

TABLE 9

DISTRIBUTION OF CITIES AND PAIRS OF CITIES ON ROUTE BY RANK ORDER OF PASSENGER MILES
CIVIL AERONAUTICS BOARD MARCH 1949 SURVEY

	Distribution of Pairs of Cities on Route by Rank Order of Passenger Miles Generated					*Distribution of Cities on Route by Rank Order of Passenger Miles Generated*					
Rank Order of Pairs of Cities	1-10	11-25	26-50	50-100	1-100	1-10	11-25	26-50	50-100	1-100	101-430*
Percentage of Total Passenger Miles Generated	20	8	9	10	47	53	19	12	9	93	7
American	6	6	8	22	42	8	6	16	10	40	24
United	6	6	9	13	34	8	4	6	12	30	38
Trans World	6	4	6	13	29	7	7	5	8	27	22
Eastern	4	7	5	10	26	6	9	8	21	44	28
Northwest	0	2	3	4	9	5	4	2	4	15	18
Capital	1	2	4	4	11	4	6	5	14	29	20
Delta	1	1	0	3	5	2	3	5	8	18	15
Braniff	0	0	2	3	5	2	4	5	6	17	12
National	1	2	1	3	7	3	2	4	8	17	12
Western	1	2	2	1	6	3	1	2	2	8	10
Chicago & Southern	0	0	0	3	3	2	4	2	6	14	8
Midcontinent	0	0	0	1	1	0	5	2	3	10	18
Northeast	1	0	0	0	1	2	0	2	1	5	18
Continental	0	0	0	0	0	0	3	4	11	18	18
Colonial	0	0	1	0	1	2	0	2	2	6	13
Inland	0	0	0	0	0	0	2	0	3	5	10

* Note that, while 430 cities served by all airlines operating domestically were covered in this study involving 15,532 combinations, only 324 cities and a lesser number of combinations were served by the domestic trunk line carriers. All the 100 top ranking cities except Honolulu and Hilo, Hawaii, were served by the sixteen domestic trunk line carriers and all the 100 top ranking pairs were served except Honolulu-Hilo. However, three other pairs (Los Angeles-Miami, Los Angeles-Minneapolis, and Los Angeles-Houston) were omitted since they were not on a single carrier's route.

good route segments. United's route which has 38 of the cities ranking 101 to 430, and generating only 7 per cent of the industry passenger miles, shows some weakness as compared to American and Trans World. One notes also, as a general rule, that the smaller airlines serving only a few of the top 50 or 100 of the traffic generating cities have more than their proportionate share of the weak traffic generating cities.

Study of the data summarized in tables 8 and 9 leads one to the following conclusions with regard to route strength: (1) the routes of the Big Four are considerably stronger than those of the other twelve airlines and doubtless account not only for their volume of operations but their relatively high load factors; (2) the routes of the smallest four are so weak that a reasonable load factor or density of traffic can hardly be expected; (3) certain airlines, like National, have a better route than the size of their operations would indicate; (4) the development of routes under the Civil Aeronautics Board has not only been widely varying as to expectable traffic volume but also as to the extent of competition, as is indicated by Eastern's ratio of 1.8 carriers serving major pairs and Braniff's 1.7 against Capital's 3.1 and Northeast's 3.0: (5) there has apparently been no attempt by the Civil Aeronautics Board to allocate the weaker traffic generating cities in such a way as to bring about routes of equal strength, regardless of size and (6) neither from the standpoint of traffic density nor the character of demand can normal (i.e. in a peacetime economy) load factors adequate to cover the present level of costs be expected for the majority of airlines in the medium small, small and very small categories.

Strength of Route the Most Important Factor

The lack of evidence that size alone accounts for the wide discrepancy in profit potentials not based on mail pay, the good load factors of the Big Four and their resultant profits, and the clearly superior route characteristics of the largest four airlines, lead to the belief that *route*, more than any other factor explains the profit or loss characteristics of domestic trunk airlines.

While route is clearly the most important single factor, one should not overlook aggressiveness in quality and quantity of service. It is a well proved phenomenon in transportation that, given equal route opportunities, the company offering the largest volume of service at a reasonably good quality will get the business. Volume is often more important than quality, for volume of service ordinarily means frequency of service and the travelling and shipping public is more likely to use the carrier with the highest frequency. While the advantages of frequency diminish with time and distance (e.g. there can hardly be too much frequency to suit travel tastes between New York and Washington, but perhaps three or four well timed frequencies each day between New York and Los Angeles will cover all normal

travel demands for frequent service), transportation is a true case of that company getting most which offers most.

The Factor of Aggressiveness in Offering Service

There is no adequate measure of the aggressiveness of carriers in offering service. For those carriers which have a proportionately equal number of the top ranking pairs of passenger traffic cities on their routes, a ratio between the total passenger miles of traffic carried in the two survey months studied here and the potential based on equal proration of traffic carried gives a fair index. Thus, for the airlines as a whole, the top ranking pairs (see table 8) accounted for approximately 47 per cent of the total traffic carried in these two months; and the ratio of total traffic to traffic for the top 97 pairs was 2.10. It is interesting that American was slightly above the industry ratio, while Eastern, United, and Capital were a little below, and Trans World, Western, and National were considerably below. Ratios for such carriers as Delta, Braniff, and Midcontinent have rather little meaning because of the proportion of traffic carried on less productive pairs of cities. But the low ratios of Trans World, Western, and National indicate that these carriers are not getting their fair share of the business through a lack of equipment and volume of service, unequal competition (e.g. United's stronger position than Western on the west coast because of its national prestige), or an inferior grade of sales promotion. As a matter of fact, study of the industry indicates that, with Trans World and National particularly, the principal problem has been a lack of first grade equipment to offer adequate competition over their most productive route segments.

Although over-all statistical measures are clouded with operating policies over branch lines and the practice of offering limited service on noncompetitive lines, the policies of most airlines in offering volume and quantity of service are fairly well known and can be ascertained from direct observation and study. Both American and Eastern have followed a policy of offering a high volume of service, particularly on competitive lines and the experience of many travellers is that, in the areas in which these carriers operate, competitors find it difficult to match these carriers' attraction through frequency and volume of service. United has apparently followed the policy of offering an exceptionally high quality of service, with a fair degree of volume on competitive routes, and a limited volume and frequency on noncompetitive routes. Trans World Airline has been hampered for many years by a lack of equipment (although this lack is currently being remedied) which has clearly not made it possible for this airline to follow a policy of high volume service, even though the management might wish to do so.

Capital Airlines has shown signs that its problem is not an ability to place a volume of service on its routes, but its financial position and

the necessity for reducing costs, as well as its highly competitive and rambling route structure, have led this airline to offer a grade of service somewhat inferior to its competitors. Northwest appears to be doing as well as can be expected from the standpoint of volume and quality of service, with its problems being route limitations and the incidence of high operating costs due to the introduction of two new and costly types of aircraft.

The outstanding case of being placed in an inferior position because of lack of volume of service is National whose small fleet of DC-6's and lack of other modern aircraft, as well as its small fleet of aircraft for the size and potential of its route, have placed it at a competitive disadvantage. Western has also not offered the volume of service which its route would seem to warrant, although, as has been pointed out, its problem of competing against nationally strong United on the west coast may overshadow any policy which the management might like to pursue. There is some evidence that both Delta and Braniff have followed too conservative a policy in putting modern aircraft into the better segments of their routes in volume large enough to meet the competition of such strong carriers as American and Eastern. As for the other airlines, there has naturally been some reluctance to meet the quantitative competition of large competitors, since, by and large, their routes are so weak that a strong promotional policy would be hazardous. Yet, one finds surprising cases of high quality and relatively high volume service among these carriers. Among such cases might be noted Continental and Midcontinent.

Summary of Factors Affecting Profitability

In summary, the answer to airline profitability and the ability of the domestic trunk airlines to stand on their own feet lies primarily in route structure. There are noteworthy cases of good and aggressive management and of extraordinary cost control. Virtually any airline which could combine United's or Western's low maintenance costs, National's low direct flying cost, and Eastern's low level of indirect cost could earn a profit with even the load factors experienced. But route characteristics necessarily affect these costs. Northeast, with a short trip route structure could never expect low direct flying costs. An efficiently operated airline like Continental could hardly expect Eastern's level of indirect costs because of the low traffic density of its route.

Moreover, there can hardly be doubt that the use of modern equipment has helped the cost and improved the load factors of such carriers as American and United. The domestic airline industry is far from modernized with more DC-3's and DC-4's in operation than all postwar airplanes combined.[7] The railroads were slow to learn, although many

[7] Although, to be sure, by mid-1949, more passenger miles were being carried in the larger and more efficient modern aircraft, such as Constellations, DC-6's and Convairliners.

now have, how new equipment can reduce costs and improve service. The airlines, traditionally aggressive, show signs in some quarters of falling into the lethargy of using old equipment indefinitely. And a mail pay system which emphasizes need and puts a premium on not trying the new does not help in developing aggressive management looking for new ways to lower costs and improve service.

As the analysis of the traffic generating possibilities of the various airline routes indicates, the problem of route inadequacy is not particularly one of multiple carrier competition.[8] There are doubtless routes upon which too much competition exists, in the sense that all the advantages of competition could be obtained with fewer carriers and some advantages would result through remaining carriers handling traffic at a higher density. But this is not the major problem. The problem is rather the size and character of the market facing each individual carrier. In general, the weaker twelve of the sixteen domestic air carriers, and particularly the weakest seven, have facing them a market so inadequate from the standpoint of volume and density of traffic that they can hardly expect a load factor which will return revenue adequate to meet their costs.

To illustrate the conclusion that the problem is not so much the intensity of intercarrier competition, but rather that of market, the case of Continental Airlines might be used. This airline is among those with the least competition from air carriers on its lines (the data in Table 8 will not show this, since only the top 100 pairs of cities are considered, although complete analysis of Continental's system will reveal it). This airline had none of the top 100 pairs on it and only seven of the top 50 traffic generating cities, from which 84% of airline passenger miles came in March, 1949, were on its line. Yet it served 29 cities among the weakest 330 points generating only 7% of all airline passenger miles in the country. This airline is one of the best managed and most efficient airlines in the nation; still it is probably safe to say that in normal times the size of the demand facing this company cannot support a profitable business without some mail pay assistance.

Similar conclusions can be drawn from most of the other weaker carriers. Only in the case of Capital does it seem probable that the intensity of inter-carrier competition explains, in part, its weakness. And even in this case it is far from certain that the relatively few heavy traffic generating pairs of cities and the relatively large number of weak route segments may be more important than the intensity of competition.

The Implications for Public Policy: Consolidation

If profitability, economy, and self-sufficiency for the domestic trunk line carriers depend so much upon improved routes, the answer for public policy seems to be simple in principle. With the exception of a

[8] As found by Gill and Bates, *supra*.

few segments which could stand additional service, the need for route improvement should not, of course, be met through new and additional routes for the weaker carriers but by a definite public policy for consolidation. A mere glance at the wide differences in route and size is sufficient to arouse suspicion that the present policy of continuing sixteen trunkline carriers will never lead to economic self-sufficiency for the airlines. And examination of the underlying factors amply supports the need for overhaul of the airline route structure.

Let us see how this policy might work. The Civil Aeronautics Board, whose responsibility it is to develop and foster such a program, must have a plan. This plan, to be practical, should not be based upon the premise of cutting up currently successful and well operated airlines, but rather upon the basis that the smaller airlines which cannot hope for self-sufficiency in normal times should be merged so as to make a system of strong airlines. It might also be necessary, although it is by no means clearly so, to force the abandonment of certain route segments, or to place them in the category of local service airlines whose service it is the intention of the government to support as a public service to small communities.

For example, suppose that some way could be found to force the merger of Northeast, Colonial, National, Delta, Chicago and Southern and Capital (except for those lines Chicago-Detroit-Cleveland-Pittsburgh-New York) into an airline system similar to Eastern's system. Such a system would be a strong north-south carrier in the eastern half of the United States. Analysis of the September, 1948 and March, 1949 Airline Surveys of the Civil Aeronautics Board indicates (see Table 10) that such a system would serve an average of 27.5 of the top 100 pairs with a prorated potential of more than 70 million passenger miles for the two months: a system with enough potential volume and traffic density to promise economic self-sufficiency.

Likewise, if a merger were forced between Northwest and Western (including Inland), plus Capital's route Chicago-Detroit-Cleveland-Pittsburgh-New York, along with a new route from San Francisco-Salt Lake-Denver-Chicago and certain transcontinental nonstop privileges, there would emerge a fourth transcontinental airline almost as strong as United.

These two merger programs, bringing a strong eastern and a strong transcontinental carrier out of nine smaller carriers would make a logical pattern with a minimum of cutting up of present carriers. Midcontinent, Braniff, and Continental have not been allocated in the suggested transcontinental and eastern mergers, although there might be some logic in doing so, since it is believed that a system so resulting would be rather too large, in comparison with the present transcontinental carriers. Consequently, for the purpose of this suggested plan, it is assumed that Continental is assigned to Trans World, along with most of Braniff's routes, and Midcontinent is allocated to Eastern,

along with Braniff's Chicago-Kansas City and Memphis-Tulsa routes. The result of so doing would be to strengthen both Trans World and Eastern in areas where the strength would be of material benefit to them.

While the above suggested mergers are not offered as a rigid plan, they do tend to show how a plan of mergers can bring forth a smaller number of large airlines, drawing upon the important traffic generating centers and traffic routes so as to make them strong. The relative strengths of the routes, revamped as suggested, is shown in Table 10. Using as a fairly good index of route strength the potential served by the top 100 pairs of cities in the September, 1948 and March, 1949 Airline Surveys, one finds a surprising degree of equality in the route strengths of the six airline systems.

While such a merger program, apparently drastic in nature, would reduce the domestic trunk line carriers from sixteen to six, it would not reduce competition in many of those route segments were competition now exists. In fact, in the major route segments, exemplified by the top ranking 100 pairs, the merger program would slightly increase competition. Comparison of the competitive factor (average number of carriers serving pairs of cities) in Table 10 with those in Table 8 shows a slight rise in the element of competition. Yet, even with this rise in competition, the pro-rated share of traffic remains high for all carriers, even though that of American, United and Eastern is slightly higher

TABLE 10

PROPOSED DOMESTIC TRUNK AIRLINE ROUTE STRUCTURE
COMPARATIVE ANALYSIS OF PASSENGER MILE POTENTIAL OF AIR CARRIER ROUTES AS MEASURED BY INTERCITY ROUTE TRAFFIC OF TOP 100 RANKING PAIRS OF CITIES IN SEPTEMBER 1948 AND MARCH 1949 AIRLINE SURVEYS

	Average Number of Top 100 Pairs Served	*Total Passenger Miles of Pairs Served* (000,000's)	*Potential to Airline Based on Equal Proration* (000,000's)	*Average Number of Carriers Serving Pairs*
American	43.5	269.5	98.7	2.7
United	38	256.9	87.6	2.9
Trans World(1)	40	240.3	85.5	2.8
Eastern(2)	26.5	155.9	70.8	2.2
Combination A(3)	27.5	153.6	70.1	2.2
Combination B(4)	33	242.8	90.1	2.7

(1) Present route plus all of Continental and Braniff's route Kansas City-Wichita-Oklahoma City-Fort Worth/Dallas-Houston and Tulsa-Oklahoma City-Denver.

(2) Present route plus all of Midcontinent and Braniff's route Chicago-Kansas City, and Memphis-Tulsa.

(3) A combination of domestic routes of Northwest, Colonial, Delta, National, Chicago and Southern, and Capital (except Chicago-Detroit-Cleveland-Pittsburgh-New York plus a new route Cleveland-Cincinnati.

(4) A combination of Northwest and Western (including Inland) plus Capital's route Chicago-Detroit-Cleveland-Pittsburgh-New York plus a new route San Francisco-Salt Lake City-Denver-Chicago, also nonstop flights permitted (in addition to present nonstops) New York-Los Angeles, New York-San Francisco, Chicago-San Francisco, Chicago-Los Angeles, and New York-Chicago.

under present circumstances, than could be the case if this program of mergers were effected.

Since it is believed that a program of mergers, somewhat along the lines of that suggested here, is the only answer to airline financial and economic self-sufficiency, there is immediately the question as to how any such merger might be effected. In the first place, it is the responsibility of the Civil Aeronautics Board to come forward with a plan. Unless airlines know what the Civil Aeronautics Board will approve, no one is likely to undertake the trouble and expense of putting together a successful merger only to find that the government agency in charge of civil air transportation will not approve it. In the past ten years there has not been a single major airline merger among the trunk airlines, although plans for a few have been announced and others have been abandoned because of the attitude of the Civil Aeronautics Board.

There is certainly no reason, legally or politically, why the Board should not study the problem of strengthening routes through the consolidation process. There appears to be no reason, except lethargy, why the Board should not come out with a positive statement that it will look with favor on consolidations which follow a particular plan. The development of such a plan cannot do harm and can surely do some good, especially when it is realized how strong a few well selected mergers can make an airline.

But, so long as consolidation is voluntary, there is no more reason to expect a series of consolidations according to plan than developed in the railroad industry after the Transportation Act of 1920. It is no secret that the airline industry is still led by men, most of whom were pioneers in aviation, and who like the idea of being head of an airline no matter how small or how economically insufficient the company is. While the abilities of these leaders are often great, their interest in protecting their position argues against any hope of any program of voluntary consolidation, even on a modest scale.

However, unlike the railroad industry in which a voluntary consolidation plan failed, the domestic trunk airline industry, except for the four largest carriers, appears to be dependent, at least in normal times upon a level of air mail pay higher than that which would normally be paid for the service. And the Federal Government is unwittingly the principal party in supporting an economically unstable industry through its mail payments. Since the power to withhold subsidy funds is one of the most effective instruments of control, and since the Civil Aeronautics Act provides for mail pay only under economical and efficient management, it appears that the Board has ample power *now* without any further legislation to force a plan of consolidation.

The threat to withhold excess mail pay would probably be an ample regulatory tool to force consolidation. Should the threat be insufficient, the actual withholding of mail pay subsidies would surely work even though a carrier might be forced into bankruptcy or trusteeship in

the meanwhile. There is a curious feeling in government and industry circles that an airline cannot be allowed to go bankrupt. There appears to be no basis in law or public policy for this attitude, for the Civil Aeronautics Act does *not* guarantee profits under all circumstances and financial reorganization need not affect operation of a public service.

Consolidation of the domestic trunk airlines into six large systems, through giving each airline a share in the lucrative haul between the major pairs of cities of the United States, would probably make for such strong airlines economically that the local service hauls for which these airlines are now certificated could be handled without causing loss to any system as a whole. If, after a period of trial, it should be proved that these local services so burden an airline that action is called for, the Civil Aeronautics Board could then decide upon an appropriate course of action. It would seem that, in such an event, either these services should be abandoned or, if required as a public service, should be paid for by separate subsidies. Such subsidies would be specific and for a definite service and not, as present subsidies, to place an umbrella over the efficient and inefficient alike.

If, as this analysis indicates, the basic cause for the need for air mail payments above a service rate of pay is the weakness of the routes of all but the four largest carriers the way for bringing economic self-sufficiency to the domestic trunk airlines is clear. All that is needed is a plan and the will to make payment of mail subsidy contingent upon a reasonable conformance with such a plan in a reasonable period of time. The Civil Aeronautics Board can act if it will.

AIRLINE PASSENGER TRAFFIC PATTERN WITHIN THE UNITED STATES

By D'Arcy Harvey

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THE density and flow of airline passengers between pairs of communities is only one of the several related research projects which the Civil Aeronautics Administration has completed that deal with a community's characteristics and its demand for air transportation. In these research projects, the statistical indicators of air transportation activity, such as aircraft ownership and aircraft operations, have been correlated with the basic economic factors which create and control them. This article sets forth the factors determining the airline passenger traffic pattern within the continental United States. Traffic density and flow are stated in terms of airline passenger traffic for September 1948, as this is the last September for which complete data are available from the CAB Airline Traffic Surveys.

Primary Factors Affecting Traffic Flow

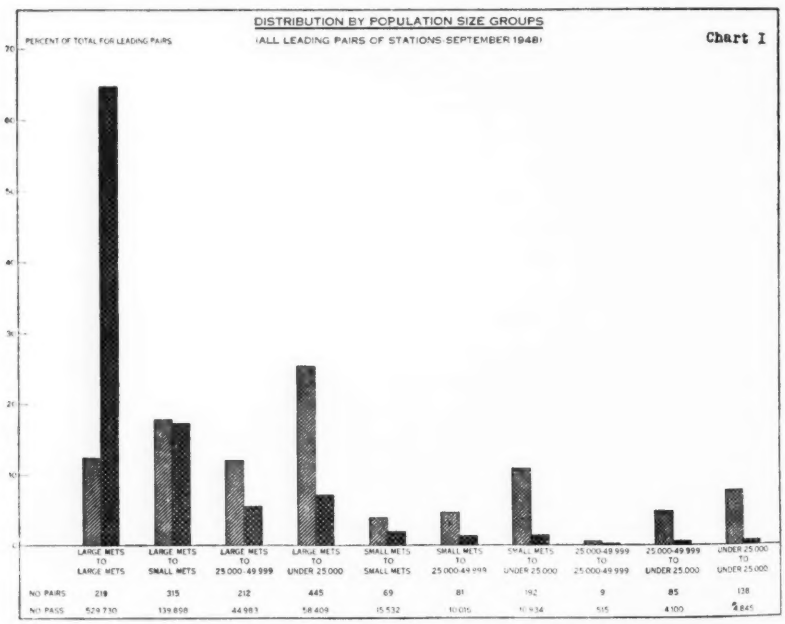
Prior to any discussion of the factors affecting the airline passenger traffic pattern is the recognition that traffic flow is the movement of passengers between two communities. The volume of traffic is controlled, therefore, by factors affecting both of the communities in the pair, rather than factors affecting only one of the places. It follows, therefore, that the primary factors must be ones which are representative of both communities and are a measurement of the combined effect of both communities on the volume of airline passenger traffic.

The very definition of air transportation establishes the *population* of the communities in a pair as one of the primary factors. The combined effect of the population could be stated either as the sum or the product of the populations of the two communities. Population product, rather than the sum, is the correct measurement of the combined effect of the population of the two communities in a pair for it takes into account the relative size of both places.

The population product for a pair of communities is obtained by the multiplication of the population of the two communities in the pair; the population product of New York-Chicago in 1950 was more than 70 trillion, while the one for two communities of 10,000 each amounted to only 100 million. When other factors are held constant, any community will have its maximum passenger volume with the largest place to which it has adequate airline service and, conversely, its

smallest traffic with the smallest city. As a rule, therefore, the volume of passenger traffic between pairs of communities tends to vary directly with the difference in the size of their population products.

In September 1948 a substantial volume of traffic between a pair of communities required that one or both communities in the pair be a large metropolitan area (1950 population of 300,000 or more) while a significant traffic density had the requirement that both communities be a large metropolitan area. Chart 1 illustrates the dominating force of large metropolitan areas in the airline passenger traffic pattern and it also shows that substantial airline passenger traffic only occurs between a pair of communities having a large population product. By definition, a large population product requires that at least one community in any pair be a large metropolitan area.


DISTRIBUTION BY POPULATION SIZE GROUPS
(ALL LEADING PAIRS OF STATIONS-SEPTEMBER 1948)
Chart I
PERCENT OF TOTAL FOR LEADING PAIRS
70
60
50
40
30
20
10
0
LARGE METS TO LARGE METS
LARGE METS TO SMALL METS
LARGE METS TO 25,000-49,999
LARGE METS TO UNDER 25,000
SMALL METS TO SMALL METS
SMALL METS TO 25,000-49,999
SMALL METS TO UNDER 25,000
25,000-49,999 TO 25,000-49,999
25,000-49,999 TO UNDER 25,000
UNDER 25,000 TO UNDER 25,000
NO PAIRS 219 315 212 445 69 81 192 9 85 138
NO PASS 529,730 139,898 44,983 58,409 15,532 10,015 10,934 515 4,100 2,845

Consider these figures: In September 1948, 64.7% of all passengers were found in pairs of communities where both were large metropolitan areas and an additional 29.7% were in pairs where one of the communities was a large metropolitan area. The remaining 5.6% accounts for all pairs generating traffic in which neither community was a large metropolitan area.

The *distance* between communities in a pair is the second primary factor. Airline passenger traffic, like surface transportation, has the bulk of its activities concentrated within the shorter distances. The number of airline passengers, other things being equal, will vary inversely with the distance between the communities. In September 1948 most of the airline passengers traveled less than 400 miles. As

shown in Table 1, only pairs of communities with large population products had sufficient "force" to generate any significant volume of traffic beyond 400 miles. However, the concentration of traffic for pairs of communities in which both were large metropolitan areas occurred in the short distance brackets.

TABLE 1

Mileage Brackets	*% of September 1948 Passenger Traffic*		
	Both Large Met. Areas	*One Community A Large Met. Area*	*Neither Community A Large Met. Area*
Under 100	2.2	11.0	16.2
100-199	26.2	29.0	52.1
200-299	21.5	26.0	22.0
300-399	14.0	12.0	6.2
Sub-Total	63.9	78.0	96.5
400-799	21.0	17.0	3.5
800-1199	8.1	4.0	0.0
1200 and over	7.0	1.0	0.0
Total	100.0	100.0	100.0

This distance principle is valid in all forms of transportation. However, in air transportation, three qualifications must be made. The first one has to do with a basic attribute of air transportation and will always be a qualification of the distance concept. The other two are qualifications which can possibly be removed, since they relate to the vehicle and management. These three distance qualifications are:

I. *Effect of Differences in Air-Surface Distance Ratio*

Air transportation usually has an advantage of shorter distance over surface transportation, normally about 15%. When the air distance is much shorter than the ground distance, cities benefiting from this condition tend to divert greater proportions of their total traffic to transportation by air. As an example, Milwaukee is almost equi-distant by air from Madison and Muskegon. Madison is the larger of the two cities and is an Institutional with very high purchasing power, while Muskegon is an Industrial with average purchasing power. However, the air distance between Madison and Milwaukee is approximately the same as the ground distance between them, while the air distance between Muskegon and Milwaukee is less than 30% of the ground distance between them. Muskegon and Madison are thus in totally different situations with respect to airline passenger traffic with Milwaukee in terms of time saved over ground transportation. Moreover, they are in different situations with respect to relative costs of air and rail travel. The Madison traveler to Milwaukee pays $4.40 (plus tax) to go by airplane but only $2.84 by rail, while the Muskegon traveler *pays less to go by air than by rail.* The result in differences of air passengers between each of these cities and Milwaukee is startling. During the month of September 1948, the number of passengers by air

between Madison and Milwaukee was only 92, while the number between Muskegon and Milwaukee was 1,361.

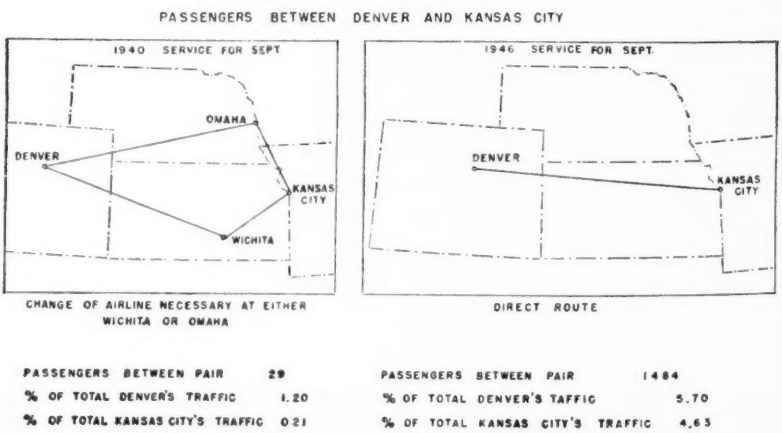
II. *Minimum Distance for Airline Passenger Travel*

Under present conditions, air transportation is often not a paying proposition to a customer for very short distances. Experience has demonstrated that the minimum competitive distance for airline passenger transportation lies somewhere around 100 miles unless there are counter-balancing barriers to surface transportation. This void of airline passenger traffic in the shorter distances is particularly noteworthy in view of the fact that the bulk of surface-carried passengers travel less than 100 miles. Over 98% of all automobile passengers and over 44% of all rail passengers travel less than 100 miles. By contrast, only 5.7% of all scheduled airline passengers travel within this mileage bracket. This fact points up the absence of airports and aircraft types geared for the mass travel market at short distances.

III. *Management Factors Affecting Airline Passenger Travel*

There are a number of management factors which are not susceptible to mathematical measurement but are of obvious importance in evaluating community air passenger generation and distribution, particularly the time-distance relationships. Examples are: direct versus indirect connections, number of schedules, time of schedules, service standards and other human factors. While such factors cannot be measured precisely, their effect on community air passenger traffic is obvious. Chart 2 shows that when air connections between Denver and Kansas City were indirect, Kansas City contributed only slightly over 1% to Denver's total air traffic and

Chart 2. DIRECT VS. INDIRECT CONNECTIONS



Denver contributed only 1/5 of 1% to Kansas City's total. When direct connections were established between these two centers, however, the two cities exchanged about 5% of their air passengers with each other.

Secondary Factors Affecting Traffic Flow

The *economic character* of each community in a pair is the most important secondary factor which influences the volume of inter-city airline passenger traffic. The traffic between any pair of communities varies in accordance with the traffic-generating power of *each* of the communities. The average Marketing Center will generally generate more passengers than the average Industrial city of the same size, because the residents of the Marketing Center have more need for and ability to buy air transportation than do the residents of an Industrial community.

Moreover, the factors of geographic location and of economic character often coincide to swell the community volume of passengers and passenger-miles. Marketing Centers, being central distribution points with vast hinterlands, are relatively far away from other cities of comparable size, while Industrial centers can perform their productive functions best in close proximity to other cities. Institutionals, which derive a major portion of economic support from resort and related activities, similarly often have a greater air transportation community-of-interest with remoter population centers than with those closer at hand. Thus, Miami's largest traffic is with New York City, 1,090 air miles away, and its second largest traffic is with Chicago, 1,190 air miles away. Balanced cities, being by definition about average in purchasing power and air potential, are also around average in passenger flight miles.

The density of communities within a geographic area is the other secondary factor affecting passenger traffic volume between pairs of communities. Where many cities are within an area, the traffic between any pair is minimum because the traffic for each community in the pair is distributed among many. On the other hand, where cities are few in an area, the traffic between a pair is maximum as the traffic for each community in the pair is concentrated with the other.

The heavily populated Northeast is an example of community density. In New England, Hartford, Boston, Bridgeport, Lowell, Providence, Springfield and Worcester are all within 125 miles of each other. New York State has Albany, Buffalo, Rochester and Syracuse close to each other and to the New England large metropolitan areas and to Philadelphia, Baltimore and Washington nearby. A similar situation exists in the industrial belt in and around Ohio. By contrast, Denver's nearest large metropolitan area neighbor, Omaha, is 485 miles away; Miami's nearest large neighbor, Atlanta, is 614 miles away; and San Francisco's nearest large neighbor, Los Angeles, is 327 miles away.

Inter-City Passenger Volume Formula

Of the principles discussed, the first two relating to population product and inter-city distance can be measured somewhat precisely. Their mathematical expression is stated below. The traffic between Community X and any other city, with economic character and area density held constant, will be roughly proportionate to the product of the populations of communities divided by the distance between them:

$$\frac{\text{Population} \times \text{Population}}{\text{Distance}} \qquad \frac{(P \times P)}{(D)} = \text{Traffic Ratios}$$

Like all economic formulae, this one is a guide and an indicator. Its application requires a fundamental knowledge of economic geography and air transportation.

Chart 3 demonstrates the use of this formula to calculate the relative air traffic between Chicago and 11 other communities in the same size and economic character group. The left side of the chart shows that Chicago should theoretically have its largest air passenger traffic with St. Louis, its second largest with Cleveland, etc., and its smallest

Chart 3. Percent of Chicago's Passengers With Other Balanced Large Mets.

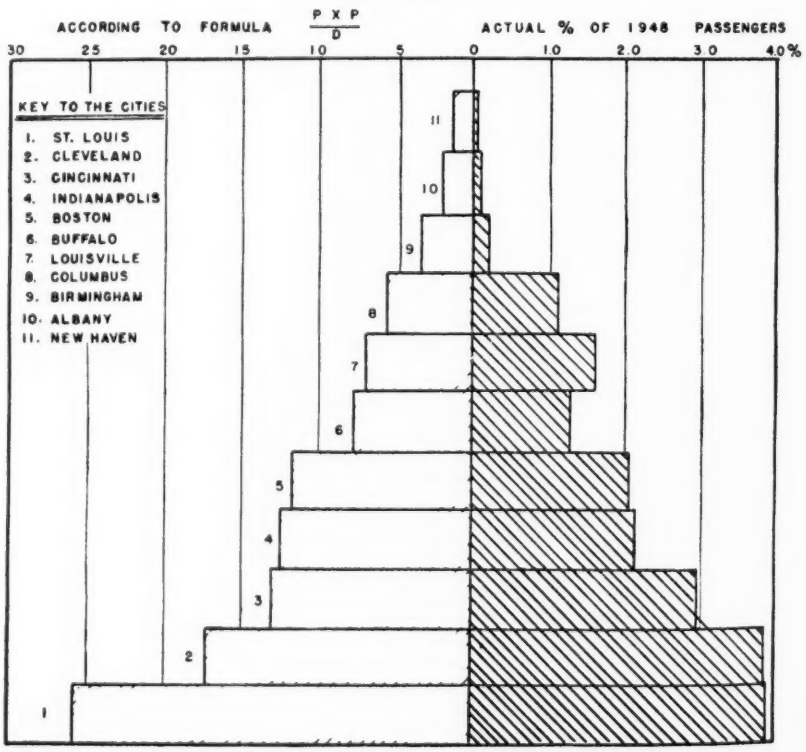
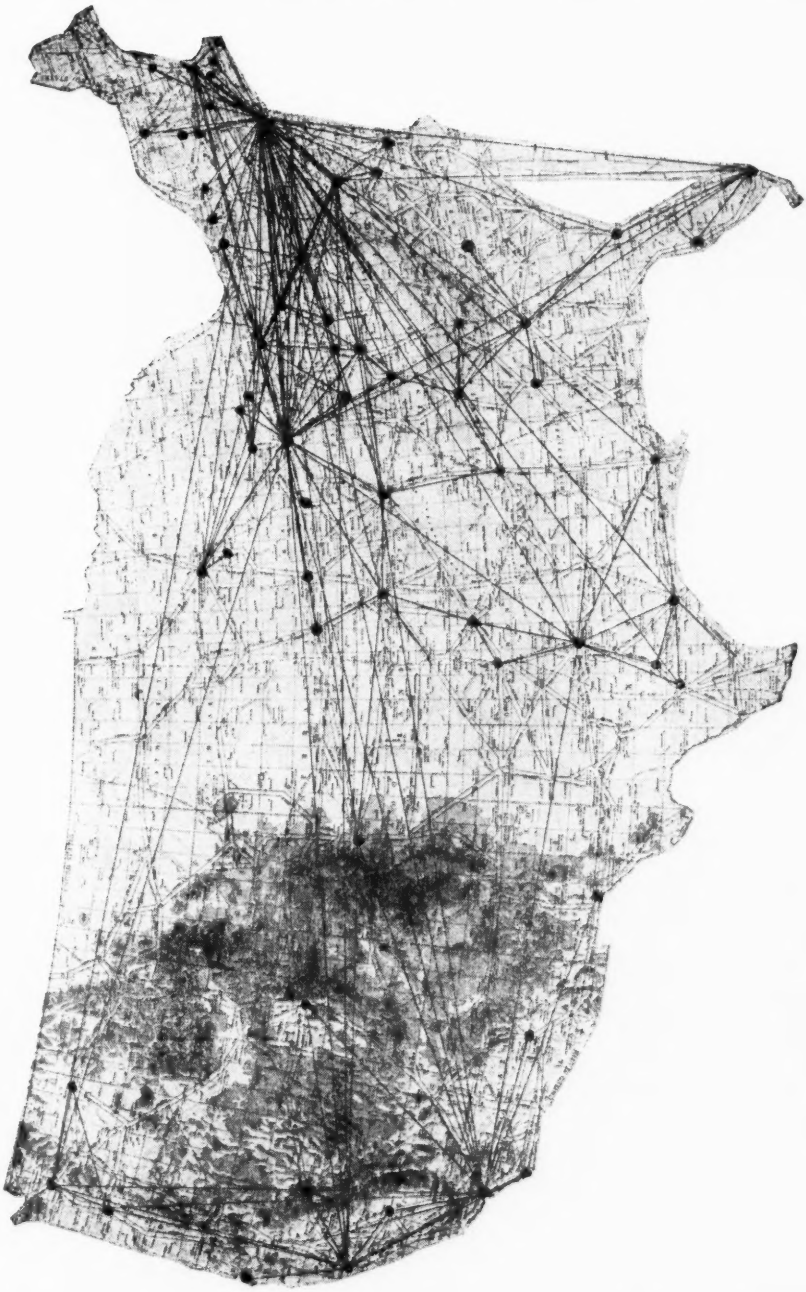


Chart 4. Pairs With 1000 or More Passengers



traffic with New Haven. The actual distribution of Chicago's air passenger traffic during September 1948, on the right side of the chart, shows the close relationship between theoretical computation and actual performance. Again, it is noted that Chicago's largest traffic was actually with St. Louis, the next largest with Cleveland, etc., and its lowest with New Haven. In fact, only one of the 11 communities, Buffalo, was out of line in this comparison of theoretical versus actual distribution. If Chicago's traffic distribution with Marketing Centers were calculated instead of with Balanced communities as in Chart 3, the formula

$$\frac{P \times P}{D}$$

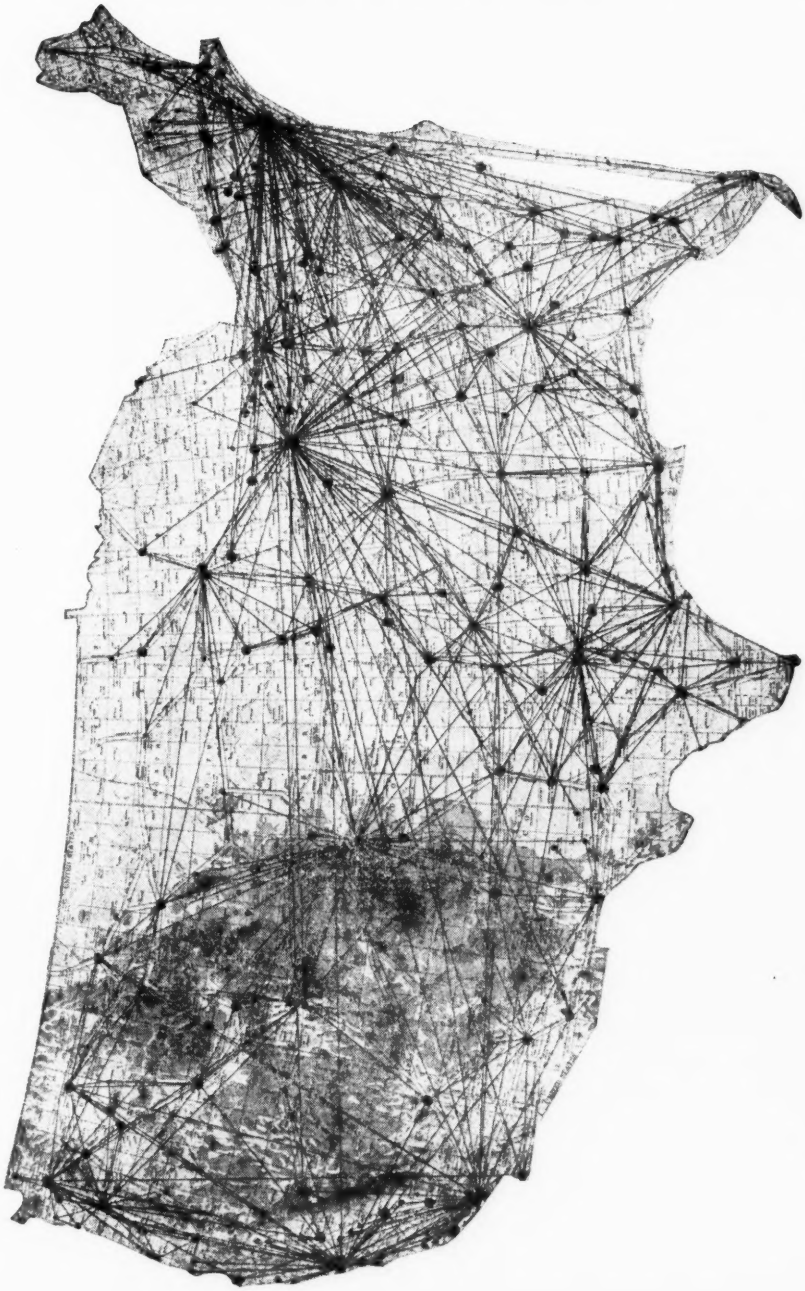
would produce a similarly comparative progression between actual and theoretical traffic distribution by community but on a higher level because of the superiority of traffic-generating power of the Marketing Centers as a group. Conversely, Chicago's traffic with Industrial centers would be on a lower level but still in accordance with the basic formula.

Airline Passenger Pattern

The location of the large standard metropolitan areas within the continental United States, particularly the ones with a population of 1,000,000 or more, establish the basic airline passenger pattern. The pattern so established, shown in Charts 4 and 5, can be likened to a series of "wheels." The "hubs" are communities like New York, Chicago, Washington, Los Angeles and San Francisco, etc., which are connected by "wheel spokes" to lesser "hubs," and "rim-points." High density traffic moves between "hubs"; significant volume occurs between a "hub" and a "rim-point." The volume of passengers for pairs of small cities is relatively unimportant. The concentration of activity around a few "hubs" and in the shorter distance brackets is the trademark of the airline passenger pattern. The passenger patterns for September 1940 and September 1946 were like the one for September 1948. Partial data for September 1949 and 1950 also confirm the September 1948 pattern. This stability occurs because economic geography, rather than chance, fixes the pattern.

It is evident that the geographic distribution of the large metropolitan areas determines the airline passenger traffic pattern within the United States. Will the present pattern hold true for the future? The answer is an unqualified *yes*, for the population distribution within the United States, as disclosed by the 1950 Census, is similar to the ones for previous years. Probably the outstanding facts in the 1950 Census were the continued urbanization of the United States and the concentration of the 1940-50 population growth within the 168 standard metropolitan areas.

Chart 5. Pairs With 100 or More Passengers



A CRITIQUE OF PROPOSALS TO SEPARATE SUBSIDY FROM AIR MAIL PAY

By D. Philip Locklin

Professor of Economics, University of Illinois; Middlebury College, A.B., 1920; Harvard Univ., A.M., 1922; Univ. of Illinois, Ph.D., 1926. Author of *Economics of Transportation. Formerly,* Principal Transportation Economist, Interstate Commerce Commission; Consultant, National Resources Committee; Special Expert, U.S. Maritime Commission; Consultant, National Resources Planning Board; Director of Interterritorial Freight Rate Studies, Board of Investigation and Research; Consultant to Special Counsel, Province of Alberta.

THE steady increase in the amounts paid to commercial airlines for carrying mail has led to increasing demand that the subsidy element and a "reasonable compensation" for the service performed by the airlines in carrying mail be separated.

It will be observed from Table I that for the years 1945 and 1946 the ton-mile yield of the mail rates was not greatly in excess of that of passenger fares and express rates for the trunk lines. In other years the

TABLE I

Average Ton-Mile Revenues from Passenger, Express, Freight, and Mail Traffic, Domestic Airlines, 1938-1950 [1]

	Average revenue per ton-mile			
	Passengers [2] *(cents)*	*Express (cents)*	*Freight (cents)*	*Mail (cents)*
		Trunk Lines		
1938	52.6	58.00		208.00
1939	51.3	58.00		214.00
1940	50.9	60.00		210.00
1941	50.4	58.65		188.08
1942	50.3	54.56		149.05
1943	55.0	58.26		77.65
1944	51.7	47.97		64.92
1945	52.2	48.85		56.65
1946	47.1	41.98	32.74	54.73
1947	47.3	39.36	27.11	76.37
1948	53.8	33.70	20.69	112.23
1949	58.2	34.41	19.63	117.39
1950	56.4	32.72	19.41	109.30
		Feeder or Local Lines		
1942		116.61		2,877.80
1943		111.78		2,083.71
1944		78.35		1,167.41
1945		72.48		873.52
1946	47.1	51.60		1,722.23
1947	48.1	41.93	55.87	3,875.39
1948	51.0	36.64	27.78	4,295.64
1949	54.1	37.60	29.77	2,897.69
1950	54.7	36.15	31.24	2,865.49

[1] From annual reports of the Civil Aeronautics Board.

[2] Average passenger fare per mile converted to ton-mile basis by considering passenger and baggage to weigh 200 pounds.

ton-mile yield of mail rates has greatly exceeded the yield from other traffic. The high ton-mile revenues received by the local and feeder lines for transporting mail arise from the fact that they are paid on a plane-mile basis but the weight of the mail transported is small.

It is clear that Congress, in enacting the Civil Aeronautics Act of 1938, intended that the payments to the airlines for transporting mail should be sufficient to keep them in existence and enable them to develop and expand air transportation service. In fixing "fair and reasonable" rates for the transportation of mail the Civil Aeronautics Board is required to take into consideration "the need of each such carrier for compensation for the transportation of mail sufficient to insure the performance of such service, and, together with all other revenue of the air carrier, to enable such air carrier under honest, economical, and efficient management, to maintain and continue the development of air transportation to the extent and of the character and quality required for the commerce of the United States, the Postal Service, and the national defense." [3] As stated by the Board in 1942: "The Civil Aeronautics Act has established the rule that where the other revenues of an air carrier do not suffice to meet the expenses of developing and maintaining air transportation as required in the national interest, the air-mail compensation shall be given the marginal role, and shall be established at such a level as is necessary to build the total revenues up to the required level." [4] It will be noted that the carrier's need is an important element in fixing "just and reasonable" air-mail rates, and that the Act does not distinguish between a subsidy element and a non-subsidy element in the rates to be fixed. Recent discussions of the subsidy question call for distinguishing between the subsidy element in the air-mail pay, and what is variously termed a "just and reasonable," "compensatory," or "commercial" mail rate, or "earned mail pay."

For several years the procedure for determining air-mail compensation under the Act was, in substance, as follows: estimate the expenses of the airlines for providing the service deemed necessary or desirable, add an amount to represent a fair return on capital invested, deduct anticipated revenues from non-mail sources, and then consider the remainder as the amount to be paid the airlines for transporting mail. By 1942, the larger carriers had attained an earning position which no longer required that mail compensation be determined in the traditional manner. In fact, to have determined their compensation in the usual manner would have resulted in no compensation, or even negative compensation, for transporting mail. Obviously, Congress did not expect the airlines to carry mail for nothing.

Under these circumstances the Civil Aeronautics Board evolved what it called a "service rate," as distinguished from a "need" rate which continued to be determined in the traditional manner. Origi-

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[3] Section 408(b).

[4] *Pennsylvania-Central Airlines, Mail Rates*, 4 C.A.B. 22, 51 (1942).

nally, the "service" rates were based on cost allocations, plus certain allowances. Costs incurred solely for mail or for non-mail services were segregated, and the costs incurred in common for mail and commercial services were allocated on the basis of relative pound-miles of mail and of non-mail traffic. The allowances in excess of costs so determined were based on a number of considerations, among which were (1) the difficulties encountered in attempting to make estimates of future revenues and expenses, particularly under changing conditions; (2) the accentuated effect which errors would have on profits or net income – a condition which results from the small amount of capital employed in relation to the volume of business; and (3) expenses attributable to various priorities accorded mail; and (4) uncertainties resulting from the war.[5] The allowances may therefore be said to be in the nature of a safety factor and provision for immeasurable elements. The "service" rates first prescribed were on the basis of 60 cents per ton-mile. Later, rates for four airlines were established at 45 cents per ton-mile. Post-war difficulties of the airlines have since required substantial increases in mail rates.

The Board considered that the "service" rates established by it contained no element of subsidy. Mr. Branch, a member of the Board, believed that the "service" rates were higher than they needed to be, and that they still contained an element of subsidy.[6] Although it may be debatable whether "service" rates contain any subsidy, it is generally considered that "need" rates do. As will be pointed out later, however, it may be argued that under some circumstances even the "need" rates do not contain a subsidy.

Is the Separation of the Subsidy Element Feasible?

There are two major arguments for separating from air-mail pay any subsidy that may be contained therein. First, it is undesirable to have the budget of the Post Office Department burdened with subsidies to airlines. The Post Office Department budget should include reasonable payments to the airlines for the services which they perform in transporting mail. To include in its budget, however, the amounts which constitute subsidy to air transportation improperly burdens and distorts the budget, and makes the Post Office deficits larger than they would be if the air-mail payments contained no element of subsidy. Secondly, the separation of the subsidy element from the air-mail payments would bring the subsidies into the open. This would presumably invite a closer scrutiny of them and a re-examination of the question of continuing them.

The arguments for separation of subsidy from the air-mail payments commend themselves as reasonable, and the proposal has re-

[5] See *Pennsylvania-Central Airlines, Mail Rates*, 4 C.A.B. 22, 43 (1942).

[6] See separate opinions of Branch in *Eastern Air Lines, Mail Rates*, 3 C.A.B. 733 (1942), and in other cases decided in 1942 and 1943 in which service rates were prescribed.

ceived wide support. It was recommended by the staff report of the Board of Investigation and Research,[7] by the Hoover Commission,[8] and by the Department of Commerce in the so-called Sawyer Report.[9] Separation of the subsidy element from air-mail payments was advocated by President Truman in his message to Congress on the 1951 budget. The Civil Aeronautics Board, although in agreement with the principle of separation, has until recently resisted legislative efforts to compel it to make such a separation. It has expressed a willingness to study the problem however, and in the "Big Four" mail rate proceeding now before it, the Board is attempting to determine a "fair and reasonable" rate exclusive of any subsidy payments to which the carriers may be entitled under the provisions of the Civil Aeronautics Act.[10]

Although there is widespread agreement that it would be desirable to separate the subsidy element from air-mail payments, the difficulty comes in making the separation. The subsidy element in air-mail compensation may be defined as the amounts paid the airlines in excess of a fair and reasonable compensation for the carrying of the mail based on commercial considerations. The problem of determining the subsidy in air-mail payments is therefore the problem of determining a fair price for the service performed.

We will now turn to a consideration of various approaches to the problem of separating the subsidy element from air-mail compensation.

The Alternative Cost Approach — Need Rates

One claim, as previously suggested, is that there is no element of subsidy in air-mail payments under present methods of computing even the "need" rates.[11] This contention is based on the belief that when airlines are paid on the "need" basis the cost to the Government is less than if the Government transported the mail itself, or possibly had it transported on a contract basis in planes devoted exclusively to this service. According to this view there is no subsidy in the "need" rates unless the cost to the Government exceeds the cost that would be incurred by the Government if it transported the mail itself or contracted out the job.

What it would cost the Government to transport the mail itself is purely speculative. What it would cost to contract out the service over particular routes might not be beyond reasonable approximation. The cost to the Government of getting the mail transported by the latter method might be very low on routes having a sufficient volume of mail to utilize fully, or nearly so, planes of such size and type as were suited

[7] *Public Aids to Domestic Transportation*, 79th Cong., 1st Sess., House Doc. No. 159 (1944), p. 49.

[8] See Report on the Post Office Department.

[9] *Issues Involved in a Unified and Coordinated Federal Program for Transportation* (1949), p. 17.

[10] Civil Aeronautics Board, *Annual Report*, 1950, p. 12.

[11] For this view see Putnam, Carleton, "The Illusion of Air Subsidy," 17 J. Air L. & C. 32 (1950).

for the task. The rates might not vary greatly from air cargo rates charged by common or contract carriers by air. On light mail routes, however, the cost would be high if reduced to a ton-mile basis.

The contention that "need" rates do not contain an element of subsidy as long as they do not result in payments that exceed the cost of getting the air mail transported in other ways rests upon the assumption that the transportation of the mail is the primary and all-important service, and that the transportation of passengers and property may be treated as a by-product. Any contribution which the non-mail services can make to the revenues of the carrier above any direct expenses incurred especially for those services lessens the contribution which air mail must make toward meeting the expenses incurred for all services together.

For this theory to be valid three conditions must be fulfilled. First, the mail service must be one which the Government would deem worthwhile and would provide either by carrying the mail itself or by hiring it transported on a contract basis. It is possible that some of the air-mail service now provided, particularly by local or feeder lines, would not be provided if its provision were not tied up with the promotion of local and feeder air service generally. A second condition which must be fulfilled for the no-subsidy contention to be valid, is that the non-mail services contribute as much as possible, up to their full share, of the expenses of the airlines incurred in common for carrying mail, passengers, express, and freight. A third condition which must exist to make the no-subsidy theory valid is that the equipment, facilities, and scale of operations conducted by the airline are not so greatly in excess of the requirements for carrying mail that non-mail revenues do not really reduce the cost of carrying mail. If these three conditions are fulfilled, the "need" rates paid the airlines could be considered as containing no element of subsidy.

There is danger that acceptance of the no-subsidy contention would lead to indiscriminate approval of "need" rates without a careful check against the cost of getting the mail transported in alternative ways. It is quite likely, however, that on some routes the "need" rates contain no element of subsidy. This might well be the situation when the non-mail business is simply sharing with mail the costs of flying planes of a size and type suitable for light traffic routes. The "need" method of determining air-mail rates, however, would become incongruous when applied to large airlines operating huge and luxurious passenger planes, and maintaining an expensive organization and elaborate facilities for the benefit of a large number of passengers, but handling a comparatively small amount of mail. To saddle upon air mail the responsibility for making up any deficiencies in revenues arising from unprofitableness of the non-mail business under such conditions would result in air-mail rates that were unreasonable. Air-mail revenue now constitutes only about 10 percent of the revenues of the trunk lines—

9.5% in 1950. To throw on this business the burden of making up deficiencies in revenues from the much more extensive passenger, express, and freight operations, as may result from the fixing of mail rates on a "need" basis, shows the absurdity of assuming that under all conditions the revenue from non-mail services is reducing the cost of carrying mail.

Our conclusion is that "need" rates, determined by the methods currently in use, do not always result in subsidy. On the other hand, the traditional method of fixing "need" rates can result in huge subsidies where it forces the mail to carry extensive losses for non-mail services, or where it makes the mail support much more extensive air transport facilities than are necessary for carrying the mail.

The Cost Allocation Approach

Air-mail subsidy is most commonly considered to be the excess of air-mail payments over the cost to the airlines of transporting the mail as determined by cost-accounting methods. Costs attributable solely to mail and non-mail services are first determined, and the remaining or common costs are allocated to mail and non-mail services on some basis that commends itself to the cost accountant as sound. This was the method used in the study made by the Federal Coordinator of Transportation,[12] and later by the Board of Investigation and Research.[13] The allocation of common costs in both of these studies was based on the ratio of pound-miles of mail and of non-mail traffic to the total pound-miles.[14]

As previously noted, the cost-allocation method of fixing air-mail rates was used by the Civil Aeronautics Board in 1942 when it first prescribed "service" rates for the airlines which had become self-supporting from their commercial operations. If the cost-allocation approach is considered sound, and if it was properly applied in those cases, there was no element of subsidy in the "service" rates there prescribed, except such as may have resulted from the generosity of the Board in making liberal allowances for unforeseen factors. The cost-accounting approach to the subsidy question, however, will show substantial subsidy to airlines which are paid "need" rates.

It may be questioned, however, whether the cost accounting approach to the subsidy question, or what is the same thing, to the determination of reasonable air-mail rates, is entirely sound. We are brought squarely to the same question that arises when an attempt is made to prescribe rates for common carriers or public utilities on a strictly cost-allocation basis. The problem is well illustrated by recent

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[12] *Public Aids to Transportation*, vol. I (1940), p. 134.

[13] *Public Aids to Domestic Transportation*, 79th Cong., 1st Sess., House Doc. No. 159 (1944), pp. 450-452.

[14] The amount of "public aid" or subsidy to the domestic airlines for the years 1938 to 1948, according to this method of calculation, are set forth on page 259 of an article by M. G. Goodrick, who applied the B.I.R. method. "Air Mail Subsidy of Commercial Aviation," 16 J. Air L. & C. 253 (1949).

cases involving railroad freight rates and passenger fares. The passenger service of the railroads has resulted in "passenger deficits" for many years, except for a time during World War II. The "passenger deficit" is the amount by which passenger revenues have fallen short of covering passenger expenses determined by an allocation of common costs on what appears to be a reasonable basis according to cost-accounting standards. Does this mean that passenger fares are too low, and that shippers of freight have been called upon to pay higher rates than they should? The answer obviously depends on whether conditions of demand will permit higher passenger fares without reducing revenues therefrom. If passenger service cannot be made to contribute any more to common costs, either the freight service must contribute it, or the carriers will fail to recover their full costs.[15] Similarly, air-mail rates of the airlines may have to contribute more to the common costs incurred in transporting mail, passengers, freight, and express, or the airlines will not recover their entire costs. We must conclude therefore that if value-of-service considerations may properly affect the rates for transporting passengers, property, and mail by the airlines, mail rates that exceed allocated costs do not necessarily contain a subsidy.

Value of Service in Determination of Air-Mail Rates

A difficulty is encountered in permitting value-of-service or what-the-traffic-will-bear considerations to enter into the determination of air-mail rates or into the measurement of air-mail subsidy. The purchaser of the transportation of air mail is the Government; the Government appears willing and able to pay almost anything for the service. In the past it has been willing to pay whatever has been necessary to enable the airlines to continue their operations, namely, the difference between air-line costs and the revenues from non-mail services. If the Government is willing to pay this price it may be argued that almost any rates are justified. To depart from allocated costs and permit value-of-service considerations to enter into the determination of reasonable mail rates would therefore seem to deny that there is or could be any element of subsidy in the rates so long as the Government was willing to pay them.

Admission of the value-of-service principle into the determination of reasonable mail pay, however, does not necessarily lead to the denial of a subsidy element. The real users of air-mail service are those who send letters and parcels by air mail. The value-of-service concept is meaningful only when related to its value to those who use the service. The situation could be seen more clearly if the Post Office Department did not impose itself between the users of air-mail service and the airlines which transport the mail, however impractical such an arrangement might actually be. Thus, if the airlines transported letters and

[15] For a discussion of the railroad "passenger deficit" see "Are Passenger Service Costs Illusory?" 127 *Railway Age* 871 (1949).

parcels for individuals directly and the airlines were paid directly by the sender, it would be clear that under traditional methods of fixing transportation rates value-of-service considerations might properly be considered in determining the airline's charge, irrespective of allocated costs.

Since the Post Office Department, however, does necessarily impose itself between the ultimate user of air-mail service and the airlines which transport the mail, the value of service can be related to the air-mail user only through comparison of air-mail payments and air-mail postage receipts.[16] If air-mail postage receipts should exceed air-mail payments to the airlines plus other costs incident to air-mail service, we would have to conclude that air-mail payments were not higher than could be justified on value-of-service considerations. If, however, we found that the air-mail postage receipts fell short of air-mail payments to the airlines plus other costs associated with air-mail service, we would not be sure that the service was worth its cost, but we would know that the service was not self-supporting under the particular level and structure of air-mail postage rates in effect.

To suggest that value-of-service considerations may justify higher rates for transporting mail than are received by the airlines for transporting passengers and property is not necessarily to justify rates for transporting mail as high as the traffic will bear. It only justifies rates as much higher than allocated costs as may be necessary to offset the inability of the non-mail services to meet their allocated share of common costs. Value-of-service considerations justify rates above allocated costs only to the extent that they are absolutely necessary. If passengers, freight, and express can contribute their share of costs, they should do so. If value-of-service considerations do not permit this, then the services with a higher value of service may properly carry the additional burden, but not more than is necessary. Air-mail rates should not subsidize passenger, freight, and express services if the latter can carry their share of common costs.

We must conclude that if conditions of demand would not permit passengers, express, and freight to contribute a pro rata share of the common costs of providing airline service, it is not unreasonable to ask mail rates to contribute what is necessary to defray the rest of the costs. If this is true, the difference between air-mail payments and costs assigned to air mail by cost accounting techniques is not necessarily a measure of subsidy. The point should be reiterated, however, that when passengers, freight, and express can be made to contribute their share of airline costs, they should do so. This was the situation existing among the larger airlines when the Civil Aeronautics Board first prescribed "service" rates for the transportation of mail.

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[16] We are not here contending that air-mail subsidy is to be measured by the relation of air-mail payments to air-mail receipts, but only that an excess of receipts over payments indicates that the service was worth more than its cost to the Government.

Our conclusion with respect to the cost-allocation method of determining air-mail subsidy is therefore as follows: (1) When non-mail services can carry their fully allocated costs, air-mail rates should not exceed the costs assigned to air-mail service. To make air-mail payments cover more than air-mail costs under such circumstances would mean either that the airlines were reaping excessive profits, or that the non-mail services were not contributing what they could to defray expenses incurred in common with mail service. When non-mail services can carry their fully allocated costs, air-mail rates in excess of fully allocated costs represent a subsidy. (2) When conditions of demand do not permit non-mail services to bear their fully allocated costs, an excess of air-mail payments over costs is not necessarily a subsidy, but only an indication that value-of-service or what-the-traffic-will-bear considerations had to be considered in fixing rates. Such excess payments could be considered a subsidy, however, if they exceeded what is, or could be, collected in the form of air-mail postage from the ultimate users of the air-mail service.

The Ernst & Ernst Method of Relating Earned Mail Pay to the Passenger-Fare Structure

The Senate Committee on Interstate and Foreign Commerce recently employed Ernst & Ernst, an accounting and management firm, to develop methods and techniques for separating "earned mail pay" and subsidy in the air-mail payments. Ernst & Ernst issued a report on the subject in January, 1950.[16a]

The report advocates a mail-rate structure consisting of two parts: (1) a fixed element to cover the handling and terminal costs incident to the loading, handling, and unloading of the mail by air-line personnel, and (2) a variable element to compensate the airlines for the "line-haul" transportation of the mail. The variable element would be related to the passenger-fare structure in a manner more fully described below. The basic mail rate, covering both the handling and transportation of the air mail, would be applied to a minimum weight per trip, with additional compensation for weight in excess of the minimum. When the total revenues of a carrier were insufficient to cover the costs of efficient operation, auxiliary payments, or subsidies, would be paid. These auxiliary payments would be paid out of appropriations made for the purpose, and not from the Post Office Department appropriations. The auxiliary payments would not be based on the actual financial needs of the airlines, but on standards of efficient operation to be established by the Civil Aeronautics Board.

In this article we are concerned only with that phase of the Ernst & Ernst proposal which relates to the determination of the "earned mail pay." The establishment of a fixed element to cover handling and ter-

[16a] Reprinted, 16 J. Air L. & C. 86 (1950).

minal costs commends itself as logical and desirable. The crucial question in the plan is the propriety of relating line-haul compensation to the passenger-fare structure.

The proposal is that, except for certain adjustments that would have to be made, the line-haul compensation to the airlines for carrying mail be made to yield the same revenue per ton-mile as the passenger business. The report, however, recognizes that adjustments would need to be made to allow for the fact that some airline expense pertains exclusively to passenger service.

The Ernst & Ernst method of separating air-mail subsidy from a "just and reasonable" air-mail rate has the advantage of avoiding attempts to separate costs between mail and non-mail services. The report considers cost separation to be impracticable and points out some results of a strictly ton-mile allocation of expenses, the fairness of which might be questioned. The report states three reasons why compensation for carrying air mail may properly be based on passenger fares. These are as follows:[17]

1. The passenger rates represent amounts that the public is paying for a measured amount of service.
2. The passenger rates represent the selling price of the industry's major source of revenue. The percentage of mail ton-miles to total ton-miles for the years 1946, 1947 and 1948 has approximated only 5% for each of these years.
3. A direct relationship of this kind is easily understood by the public.

It is submitted that the first reason given is irrelevant; the third is a weak reed to support the scheme unless reinforced by other considerations also. The second reason has validity, as will be pointed out shortly, only under very special conditions.

The assumption that mail pay should be related to passenger fares requires careful examination. If air-mail rates should, in fact, be related to passenger fares as proposed, that is, if each of the services should, in addition to meeting its special costs, contribute the same ton-mile revenues, one of three things would necessarily occur: (1) the total revenues of an airline would be just sufficient to cover all costs including a return on investment; or, (2) the total revenues of an airline would be inadequate to cover total expenses and a return on capital; or, (3) the total revenues would be more than sufficient to cover expenses and a return on capital.

Only under the first of these conditions would equal contributions per ton-mile from passenger and mail business be warranted. If passenger business and mail business yielded the airlines the same revenue per ton-mile, in addition to their special costs, and all costs were covered, the situation would be the same as that previously described in connection with the cost accounting approach in which each service

[17] *Ibid.* p. 89.

could and did contribute its share of common costs. Just as we there maintained that when each service can contribute its share of common costs it should do so, so here, we can say that when each service can contribute the same revenue per ton-mile to common costs it is proper that it should. Under these conditions there is no reason why each should not contribute equally, on a ton-mile basis, to those costs; there is no reason why any service should contribute less than such a share; there is no reason why any service should contribute more.

Under the second of the three possible conditions that would result from making air-mail rates contribute the same revenue per ton-mile as passenger fares, that is, when the total revenues of the airline would not equal total expenses and a return on investment, the situation is quite different. If total costs were not covered it would be either because the passenger fares were lower than they ought to be, or because they had to be that low on account of the limitations imposed by conditions of demand, that is, because concessions had to be made to what-the-traffic-will-bear considerations. If the passenger fares were too low, there is no reason why mail rates should also be too low. If the passenger fares were low because concessions had to be made in order to get the traffic, there is no reason why mail rates should be as low, since value-of-service considerations might not impose a similar limitation on mail rates. In the situation described it is to be assumed that the passenger revenues cover the costs incurred solely for that service and make some contribution to common costs. Under the circumstances we have just described, that is, when total revenues do not equal total expenses under rates determined by the Ernst & Ernst method, it cannot be assumed that the mail rates are properly fixed, hence it cannot be concluded that payments necessary to make up the deficiency in the earnings of the airline are properly a subsidy.

Under the third of the possible conditions resulting from the Ernst & Ernst method of fixing mail rates, that is, when total revenues of the airline exceed total expenses and a fair return on investment, we cannot rest assured that the mail rates were properly fixed. Passenger fares might well be too high. If so, there is no reason why mail rates should yield the same revenue per ton-mile.

In conclusion we may say that the weakness in the Ernst & Ernst method is the assumption that mail rates should be related to passenger fares. Only when total airline revenues under mail rates so fixed cover total expenses plus a fair but not excessive return on investment can it be said that there is justification for equal ton-mile revenues from mail and passenger service. Under other conditions it cannot be said that air-mail rates based on passenger fares are proper. We cannot therefore measure subsidy by the difference between the revenue needs of the airlines and what they are paid for carrying mail under rates so fixed.

Community Identification of Subsidy Needs

The Senate Committee on Interstate and Foreign Commerce, in an interim report on "Separation of Air-Mail Pay from Subsidy" which was released on May 5, 1950, has proposed that air-mail subsidy be identified by communities.[18] The plan seems to have been inspired by the fact that airlines would be self-supporting if they could confine their operations to service between points which originate or terminate a substantial volume of business. In other words, the need of the airlines for subsidies appears to arise from the unprofitableness of service at points which originate or terminate very little business. It is therefore proposed to allocate air-line revenues, including mail payments at a "compensatory" rate, and also airline expenses, to the various communities served, thus arriving at a sort of income statement or "profit and loss statement" of the business at each point served. The Senate Committee then proposes that the subsidies needed to support the airlines, broken down into the amounts required because of unprofitable operations at particular points, should be presented to Congress in annual requests for appropriations, and paid out of funds so appropriated.

The allocation of needed airline subsidy to the communities served, if it can be done satisfactorily, might serve certain useful purposes. First, it would make clear that the real beneficiaries of airline subsidies are not the airlines themselves, but those who benefit from airline services, particularly from those services which are not self-supporting. Although it ought to be obvious to anyone that those who benefit from airline subsidies are those who benefit from the services which airlines provide, the truth is given emphasis in the public mind by relating the subsidy need to the unprofitableness of service at particular points.

A second possible advantage of the plan is that identification of the subsidy need with the operations at particular communities might give rise to a more critical examination of the subsidies to determine whether they were justified, and if justified, whether part of the cost might not well be shifted to the communities benefited.

A third advantage of the plan is that it would reveal what services of the airlines are particularly unprofitable. This, in turn, might lead to the abandonment of the most unprofitable services, particularly if the subsidy were not forthcoming.

Certain difficulties and certain weaknesses of the proposal should be examined before steps are taken to make such a plan effective. In the first place, it will be noted that the plan first requires that a reasonable or "compensatory" mail rate be determined. The first part of this article reveals the difficulties of determining such a rate. In partial answer to this objection it might be stated that the *relative* unprofitableness of service at particular communities could be determined by the use of an

[18] Reprinted, 17 J. Air L. & C. 333 (1950).

approximately compensatory rate, or even of a mail rate that deviated considerably one way or another from a reasonable rate. But since the mail rate used in the calculations is to be the mail rate paid by the Post Office Department the impression would be created that this was, in fact, a reasonable rate, and that any additional payments required to maintain airline service constituted subsidy. Actually, the air-mail rates might be greater or less than reasonable, and the real subsidies to the airlines might be greater or less than the amounts paid under the name of subsidy.

A second difficulty with the plan is that it involves cost allocation problems in addition to those that may be involved in determining the reasonable or compensatory mail rate. The proposal requires the allocation *to* communities of costs incurred in moving persons and property *between* communities. How Ernst & Ernst have handled this problem, in their study for the Senate Committee on Interstate and Foreign Commerce, is shown elsewere in this issue of the JOURNAL. It is clear, however, that the allocation of costs, and of revenues as well, to particular communities in order to determine a "profit-and-loss" statement of the results of operations at particular points is subject to limitations similar to those encountered in most cost-allocation undertakings.

If the calculations showed that services at a particular point were unprofitable and in need of subsidy, and if Congress decided to withhold the subsidy, it would by no means follow that the airline would find it advantageous to withdraw service from the point in question. The additional revenues from traffic originated or terminated at the point might more than offset the extra or additional costs associated with the traffic, although they did not cover all the costs assigned to the community under the method of allocation employed. Stated in another way, the airline might find that the revenues lost by abandoning service at the point would exceed the savings that would be effected. Community identification of subsidy needs, therefore, might lead to unwarranted conclusions concerning the desirability of abandoning particular services.

A question that might well be asked concerning community identification of subsidy needs is whether it is worth all the trouble. Just why is it important that a subsidy, if one is needed, should be allocated to communities served? We have already suggested that it might be of some advantage to know what airline operations are the most unprofitable, but there are other ways by which management or the Civil Aeronautics Board could determine what services are profitable and what are unprofitable. It certainly does not require a radically different method of air-mail payments to bring these facts into the open. Although we have also suggested that it might be desirable to let communities know that they are obtaining airline service that is not self-supporting, the allocation of subsidy needs to communities raises the

question whether the communities themselves should pay the subsidies, or at least a part of them. Perhaps they should, but if, on the other hand, subsidies are paid to airlines for national defense purposes, or to promote commerce, or to provide adequate postal service, all federal responsibilities, then it would seem that the subsidies might appropriately be paid by the Federal Government as they have been in the past. If so, there seems to be little point in allocating the subsidy needs of the airlines to particular communities.

In conclusion, it appears that the community identification of airline subsidy needs, if practicable, has certain advantages, but that the importance of identifying subsidy needs with the unprofitableness of services at particular points is perhaps overemphasized, and may in fact lead to unwarranted conclusions concerning the desirability of abandoning airline service at particular points, and by emphasizing local benefits derived from air transportation service, may divert attention from the larger national ends which are the main justification for Government expenditures in aid of this form of transport.

Conclusions

The problem of separating the subsidy element from air-mail payments is not a simple one. We have noted objections to the concept that "need" rates are entirely free of subsidy; we have criticized strict adherence to the cost-accounting approach to the problem; we have characterized as unsound the assumption that reasonable air-mail rates are rates that yield the same ton-mile revenues for line-haul service as are yielded by passenger fares; and we have raised questions concerning the proposal to set up a "compensatory" mail rate and then compute the profitableness or unprofitableness of airline service at particular points for the purpose of allocating subsidy needs to particular localities. The conclusions of the discussion might therefore seem to be negative rather than positive in character.

On the positive side, however, we have noted that under some conditions "need" rates do not contain a subsidy; we have recognized that the cost-allocation approach is appropriate for use where non-mail services can be made to contribute their special costs and their allocated share of common costs, and that where this is not possible some accommodation to value-of-service or what-the-traffic-will-bear considerations is not unreasonable; we have recognized that under special circumstances the short-cut approach to determining reasonable mail rates which assumes that mail rates should be on substantially the same level as passenger fares is valid; and we have recognized some benefits from community identification of subsidy needs found to exist.

We are led to the conclusion that no single formula for determining reasonable air-mail rates, or for isolating the subsidy element in existing air-mail payments, is possible. The situation with respect to each

airline, and possibly with respect to each mail route, must be carefully examined before the reasonableness of the rates can be determined, or before any conclusions can be drawn as to whether existing air-mail payments contain an element of subsidy.

It would be possible, of course, to establish rates for carrying mail which were based on assumed operating conditions, types of equipment, load factors, and the like, and to make these rates applicable to all carriers, or to carriers within a group. Deficiencies in revenues that might occur could then be made up in the form of subsidy payments.

The extent to which this would be possible without doing violence to the concepts of reasonableness usually recognized in rate making would depend on the extent to which similarity of conditions exists among different airlines, or among airlines in a group or class, and also on the extent to which a system of rates can be devised which takes into consideration many of the variables which affect the costs of providing the service.

OBSERVATIONS ON THE ECONOMIC REGULATIONS OF THE CIVIL AERONAUTICS BOARD

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THE Civil Aeronautics Board's Economic Regulations are the substantive rules that command certain conduct in connection with the operation of the business affairs of all air carriers which are subject to the terms of the Civil Aeronautics Act of 1938, as amended.[1] The Economic Regulations are distinct from the Board's rules of procedure which describe the steps that must be followed in the conduct of business before the Board, its examiners or its staff.[2] Violations of the Economic Regulations can be punished under the Act, and the courts can enforce these rules on the request of aggrieved parties or of the Board itself.[3] To this extent they are extensions of the Act.[4] The Constitutionality of such extensions by regulation is well established.[5]

These regulatory extensions of the Act should stem from specific delegations of power to promulgate them. In promulgating Economic Regulations, however, the Board has not sought for definite sources of authority nor has it distinguished between legislation and interpretation. Even though the necessary objectives now reached by loosely derived Economic Regulations could have been achieved through specific authorizations in the Act, the Board has chosen to develop its Economic Regulations from general authorization. As a result the Board's Economic Regulations are productive of difficulties of under-

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[1] Act of June 23, 1938, 52 Stat. 973; as amended by various Acts.

[2] Until July 1, 1949 Rules of Practice in Economic Proceedings were an integral part of the Economic Regulations and appeared therein as Part 285 as "Rules of Practice." They are now known as Procedural Regulations and are divided into two parts: "Rules of Practice in Safety Proceedings" and "Rules of Practice in Economic Proceedings." "Rules of Practice in Economic Proceedings" are contained in Code of Federal Regulations, Title 14, Chapter 1, Subchapter C, Part 302.

[3] *Trans-Pacific Airlines v. Hawaiian Airlines*, 174 F. (2d) 63 (1949); *C.A.B. v. Modern Air Transport*, 81 F. Supp. 803 (1949), and *American Airlines v. Standard Airlines*, 80 F. Supp. 135 (1948).

[4] *Columbia Broadcasting System v. U.S.*, 316 U.S. 407 (1942); *Standard Oil Co. v. Johnson*, 316 U.S. 481 (1942); *C. V. Starr & Co. v. Commissioner*, 101 Fed. (2d) (C.C.A. 4th 1939).

[5] *Norwegian Nitrogen Products v. U.S.*, 288 U.S. 294, 305 (1933); *Buttfield v. Stranahan*, 192 U.S. 470 (1904); *Marshall Field & Co. v. Clark*, 143 U.S. 649 (1892).

standing, uncertainty as to required conduct and costly challenges to the Board's authority.

THE BOARD'S CHOICE OF AUTHORITY FOR ECONOMIC REGULATIONS

According to the Civil Aeronautics Board,

> "Basic responsibility and power with respect to the regulation of the economic aspects of air transportation are conferred upon the Board by Section 205 and the various provisions of Title IV of the Civil Aeronautics Act." [6]

In this statement the Board recognizes that specific regulations cannot be adopted and imposed upon those subject to the Board's jurisdiction by virtue of Sec. 205 alone. Sec. 205 (a) confers general rule-making power in the following terms:

> "The Authority is empowered . . . to make and amend such general or special rules, regulations, and procedure pursuant to and consistent with the provisions of this Act, as it shall deem necessary to carry out such provisions and to exercise and perform its powers and duties under the Act."

Specific rules derive validity from individual authorizations set forth in Title IV.[7] Sec. 205 (a) in itself is so general that it would seem to involve an unconstitutional delegation of legislative powers for want of sufficiently specific standards.[8] This section acquires precise meaning only in connection with particular directives as to the subjects on which regulations should be issued pursuant to the Act.[9] The particular directives in Title IV point out the specific interstices which Congress wants filled in by administrative regulation. The Board, it should be noted, does not hold that such particularity is necessary.

Title IV of the Act, plus its derivative Economic Regulations issued pursuant to the general authority of Sec. 205, constitute, ideally, a complete statement of all the rules necessary to guide an air carrier on economic matters subject to Federal regulation. As conceived by the Board, however, the purpose of the printed regulations is limited to supplementing the Act. Its Economic Regulations presently provide only certain rules in addition to those now implicit in the Act, or as it may be amplified by Board decisions. The Act plus the regulations as well as, in some instances, relevant Board decisions, must be read together to determine required conduct. Thus the regulations have

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[6] Annual Report of the Civil Aeronautics Board, 1949, p. 18.

[7] *Avent v. U.S.*, 266 U.S. 127 (1924); *U.S. v. Grimaud*, 220 U.S. 506 (1911); *Titsworth v. Commissioner*, 73 Fed. (2d) 385 (CCA 3d 1934).

[8] *Bowles v. Willingham*, 321 U.S. 503 (1944); *Yakus v. U.S.*, 321 U.S. 414 (1944); *Schecter Corp. v. U.S.*, 295 U.S. 495 (1935); *Panama Refining Co. v. Ryan*, 293 U.S. 388 (1935); *McCulloch v. Md.*, 4 Wheat. 316, 412 (1819).

[9] *Hampton Jr. & Co. v. U.S.*, 276 U.S. 394, 406 (1928).

[10] This has been accomplished in the note accompanying Part 291 as an interpretation thereof. Examples of "regular" and "irregular" service are given in interpretation of the prohibition against scheduled air flights. This is a very useful and commendable innovation in the Regulations.

the limited objective of stating only a few policy conclusions arising in the furtherance of the Act's requirements with regard to future conduct not specifically dealt with elsewhere. The Board's Economic Regulations could, of course, include both the provisions of the Act and its implementing rules together with any interpretations of general applicability.[10] This would provide a much more useful tool for the regulated industry than the present partial statement which requires recourse to the two main sources.

The Board's publication of Economic Regulations is a partial statement of the power it has exercised. What the Board can put in its Economic Regulations depends upon its authority to make rules. What it wants to put in them depends upon the needs that have been demonstrated to the Board as requiring some regulatory guidance which it is authorized to provide.

Within Title IV Congress has stated the subjects proper to the supplemental regulation of air carriers. Its sixteen sections may be divided into three types of provisions insofar as the authority of the Board to make specific regulations is concerned. First are those provisions which directly authorize or require the Board to make implementing regulations.[11] Second are those provisions which regulate air carriers in general terms, without stating in so many words that the Board shall implement them by regulation, but which require some directive by the Board to make them effective.[12] Third are those provisions which are so specific as to require no further substantive regulation to make them effective.[13] Little difficulty is encountered in determining the legal status of the third category: these are self-executing rules of conduct that can be complied with in accordance with their obvious intent. The first and second categories, however, require some sort of implementing action to impose their penalties or to make their meaning clear to those whose conduct is to be guided by the statutory requirements.[14]

It has been contended that different rule-making action must be taken with respect to the first and second categories, and that different sanctions may be imposed with regard to a violation of a regulation

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[11] *E.g.*, Sec. 401(b): "Application for a certificate . . . shall be accompanied by such proof of service upon such interested persons, as the Authority shall by regulations require." Equally specific directives are found in Secs. 401(f) and (k), 402(d) and (e), 403(a), (b) and (c), and 405(e) and (m).

[12] *E.g.*, Secs. 401(g), 402(f), 403 (d), 405(f), 406(a) and (b), 407(a), (b), (c) and (d), 410, and 416(a) and (b).

[13] *E.g.*, Sec. 401(a) prohibiting any carrier from engaging in air transportation unless the Board has issued a certificate authorizing such transportation. Also: Secs. 401(c), (d), (e), (h), (i), (j),(l), (m) and (n), 402(a), (b), (c), (g) and (h), 403, 404(a), (b) and (c), 405(a),(b) and (c), 406(c), (d), (e) and (f), 407(e), 408(a), (b), (c), (d) and(e), 409(a) and (b), 411, 412(a) and (b), 413, 414 and 415.

[14] *Federal Crop Insurance Co. v. Merrill et al.*, 332 U.S. 380 (1947); *Columbia Broadcasting System v. U.S.*, *supra*.

depending on the authorization behind the action.[15] The specific rule-making provisions of the first category are said to confer true legislative power, while any regulations made pursuant to a less specific directive are interpretative only. The Attorney General's Committee on Administrative Procedure in its Report [16] recognizes a distinction between interpretations and substantive regulations as follows:

> "3. *Interpretations.*—Most agencies find it useful from time to time to issue interpretations of the statutes under which they operate. These interpretations are ordinarily of an advisory character, indicating merely the agency's present belief concerning the meaning of applicable statutory language. They are not binding upon those affected, for if there is disagreement with the agency's view, the question may be presented for determination by a court . . .
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> "4. *Substantive regulations.*—Many statutes contain provisions which become fully operative only after exercise of an agency's rule-making function. Sometimes the enjoyment of a privilege is made conditional upon regulations, as, for example, where Congress permits the importation of an article upon such rules and regulations as the Secretary of the Treasury may prescribe . . . In such instances the striking characteristic of the legislation is that it attaches sanctions to compel observance of the regulations, by imposing penalties upon or withholding benefits from those who disregard their terms. Thus these substantive regulations have many of the attributes of statutes themselves and are well described as subordinate legislation."

It is thus contended that the significance of regulations differs with the authorizing language of the law. The compilers of the regulations published in the Federal Register recognize this contention to some extent in their statement of the authority for published regulations appearing in the Code of Federal Regulations.[17]

So far as the Board's own actions are concerned, however, there is no distinction by separate sets of regulations or other distinguishing labels between the two types or of the authority relied upon in promulgating any particular regulation.[18] The Economic Regulations contain both types without distinction.

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[15] *Treasury Regulations and the Wilshire Oil Case*, Elsworth C. Alvord, 40 Columbia L. Rev. 252; *Hesslein v. Hoey*, 91 F. (2d) 954 (CCA 2d 1937), cert. denied, 302 U.S. 756 (1937); *Walker v. U.S.*, 83 F. (2d) 103 (CCA 8th 1936); *Helvering v. Safe Deposit Trust Co. of Baltimore*, 95 F. (2d) 806 (CCA 4th 1938).

[16] Senate Document No. 8, 77th Cong., 1st Sess., p. 27.

[17] A typical statement is at the head of Part 201 of the Economic Regulations: "Authority: §§201.1 to 201.5 issued under Sec. 205(a); 52 Stat. 984, 49 U.S.C. 425. Interprets or applies Sec. 401, 52 Stat. 987, 49 U.S.C. 481." The distinction is apparently made between "interprets" and "applies," the former clarifying existing meaning and the latter providing true supplementing legislation.

[18] *Cf.* the regulations of the Wages and Hours Administrator: C.F.R., Tit. 29. Chapter V has two subchapters. Subchapter A is titled "Regulations"; Subchapter B is "Statements of General Policy or Interpretation Not Directly Related to Regulations." It is declared to "clarify . . . the practices and policies which will guide the administration and enforcement of the Fair Labor Standards Act." The introductory statement also says that before the Portal-to-Portal Act of 1947 interpretations were "only advisory, so far as the rights and liabilities of employers and employees were concerned, because the courts alone had the authority to make legally binding interpretations." The Administrator also issues "orders" which are in format like regulations, but are addressed to specific industries or trades.

There is some support for the Board's position. It has been held that there is no fundamental distinction between interpretation and legislation in the work of an administrative agency.[19] This proposition can be demonstrated logically and by analogy with precedent pertaining to the powers Congress derives from the Constitution.[20] But it is not so clear in the Board's case, because of what appears to be a specific legislative intent on the part of Congress to limit legislative type rule-making powers to those situations in which the formulation of a regulation has been specifically indicated. The legislative history of the Act does not make this explicit. The language of the Act itself, however, contains specific statements directing or permitting the promulgation of a regulation in some cases as distinguished from other specific directives in the Act which lack such a mandate. Different types of regulatory action, with differing legal consequences, would appear to be called for. The Act is fairly specific as to the ends to be achieved by regulation and by order and as to the means to be used by the Board. Little is left to implication. A complete job of legislative regulation can be accomplished within the words of the Act, as augmented by regulations on the subjects concerning which rule-making has been specified, and by interpretation of order as to the residue.

Such an interpretation of the sources of regulatory power would not permit the Board to perform some actions which derive from a less literal interpretation; but it is arguable whether any such actions would further the authorized purposes of the Act. Whatever the merits of the argument for a strict interpretation, the Board has in fact accepted a "liberal" interpretation of its rule-making authority. It has adopted regulations deriving authority from sections of the Act having no specific regulations-directing language.

For example, Parts 251 — *Prohibited Interests, Interlocking Relationships* and 261 — *Filing of Agreements* rely on Sections 409 and 412 respectively for authority. Neither section requires any action subject to such rules or regulations as the Board may prescribe or says anything about implementing regulations. Section 409 prohibits certain intercompany relationships by its officers or directors. Section 412 (a) requires the filing of certain specified types of agreements. Section 412 (b) requires the Board to disapprove *by order* those agreements that are "adverse to the public interest or in violation of the Act." The regulations in these Parts undoubtedly provide useful tools for carrying out the Board's responsibilities, but they are neither an interpretation nor a rule of action implementing the Act. Part 251 establishes a procedure for obtaining approval of a prohibited relationship: it does not prohibit or prescribe conduct as a true economic regulation does. Its objectives can be accomplished by resort to authority under

[19] *Implied Regulatory Powers in Administrative Law*, Hans J. Morgenthau, 28 Iowa L. Rev. 575.

[20] *McCulloch v. Maryland, supra.*

Section 407. Part 261 stems from Section 412 (a) which is so specific as to be self-executing. If details regarding the method of filing contracts are required, either a procedural regulation or informal instructions regarding the form and manner of filing the required contracts would be appopriate.

In adopting regulations without specific authority or in misplacing its requirements in the Economic Regulations, the Board has possibly assumed (1) that some regulation was essential, (2) that the regulation was germane to the general objectives of the Act, (3) that fine distinctions were not its function and/or (4) that if any regulated person did not like the regulation he could present the matter to a court in a challenge of the Board's authority.[21]

Not only the Board but the courts seem to be opposed to the strict interpretation suggested here. The courts have held that an express grant of power to make rules in several instances and the lack of such grant in other instances is not conclusive proof of the intention to withhold power to make rules unless there is a clear legislative intent to preclude regulations.[22] This does not close the door on the matter because a clear legislative intent to preclude can be inferred in this case. It is doubtful that the present Supreme Court would so find, however. In the N. B. C. case it has stated:

> "True enough the Act [Communications Act of 1934] does not explicitly say that the Commission shall have power to deal with network practices found inimical to the public interest. But Congress was acting in a field that was both new and dynamic . . . In the context of the developing problems to which it was directed, the Act gave the Commission not niggardly but expansive powers." [23]

The same court could say the same thing about aeronautics under the Act. Mr. Justice Frankfurter could say of the strict interpretation argument, as he said in the N. B. C. case, that Congress would have frustrated

> ". . . the purpose for which the Communications Act of 1934 was brought into being by attempting an itemized catalogue of specific manifestations of general problems for the solution of which it was establishing a regulatory agency. That would have stereotyped the powers of the Commission to specific details in regulating a field of enterprise the dominant characteristic of which is the dominant pace of its unfolding."

This is heady talk: Congressional action as "specific manifestations of general problems" and an industry with a "dominant pace" to "its

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[21] See: *Manhattan Co. v. Commissioner*, 297 U.S. 129, 134 (1936).

[22] This seems contrary to the general rule of statutory construction that where a statute expressly states the situations where a regulation may be promulgated, it thereby negates authority to make regulations in situations not expressly mentioned. See: 50 Am. Jur. *Statutes*, Sec. 244; and 59 C. J. *Statutes* for references to the application of the maxim "expressio unius est exclusio alterius" in statutory interpretation.

[23] *N.B.C. v. U.S.*, 319 U.S. 190 (1943); also *C.A.B. v. State Airlines*, 338 U.S. 574, p. 576 (1950); *American Airline v. C.A.B.*, 178 F. (2d) 903 (1949).

unfolding." These are tough things to be accused of frustrating and no Congressmen want to be accused of stereotyping. The loose-constructionist approach would appear to be the "dominant" one; and the Board, with apparent Supreme Court encouragement, is well within the limits of sound discretion in acting accordingly with regard to its rule-making powers under the Act.

It can therefore be safely assumed that, with respect to future regulatory activity, the Board will not be governed by strict rules of relevance as to its authority to put out legislative regulations. The Board will feel free to issue regulations on any subject that is in any way related to the subjects covered by the Act. "Implied" powers will be relied upon.

This is the basis upon which regulations are prepared and explains, no doubt, such regulations as Part 224 which compels air carriers to carry personnel without charge when they are "acquainting" themselves "with problems affecting air traffic control." This is also the basis for Parts 290 through 296 which extends exemptions to specified air carriers from certain sections of the Act and regulations on condition that an elaborate scheme of rules is followed. These exemptions "on condition" are in effect a whole subsidiary set of regulations which have no status whatever under any specific terms of the Act.

It is not meant to imply by the foregoing that the broad objectives sought by the Board cannot be accomplished or are to be frustrated by a strict rule of relevance in interpreting authority. Other means than an Economic Regulation are available, and Economic Regulations deriving from other sections of Title IV may be more appropriate in some cases. It is contended that the Board has a responsibility to rely on specific authorizations and to avoid vague and tenuous allocations of authority. The latter result in time-consuming and costly disputation both in the courts and before the Board and its examiners. A policy of following close rules of relevance will produce less litigation, a more solid basis of law observance requiring less enforcement activity and a more lucid and coherent set of regulations would lead to easier enforcement. Purely as a technical and practical matter, the present haphazard formulation and location of Economic Regulations, or what are in effect Economic Regulations, results in unnecessary difficulties for both the Board's staff and the air carriers. The importance of a sound policy regarding the formulation of Economic Regulations is obvious when it is considered that each regulation—either through the imposition of direct costs on airlines or through the limitations of their opportunities for gain—can strike directly at the financial position of an air carrier. Each regulation can create an increased need for public subsidy.

Potentialities of Economic Regulations and Interpretative Statements

The United States Supreme Court has said,

> "The function of filling in the interstices of the Act should be performed, as much as possible, through this quasi-legislative promulgation of rules to be applied in the future." [24]

A comparison of the amount of space taken up by the Board's regulations with that of its case reports, of the time spent by the Board on the consideration and adoption of regulations with that spent on decisions, and the number of personnel devoting full time to the study and preparation of Regulations (one attorney) with those engaged in individual case work would not lead to the conclusion that the Court's advice was being followed by the Board.

There is a great need for regulations among the regulated members of the industry as against decision by case adjudications. An eloquent statement of this need by a practitioner in the communications field has been made as follows:

> "The trouble with federal administrative tribunals, . . . as I see, is not with the procedure used in adopting regulations but rather that the legislative method of making law is not used enough. They rely too heavily on the slow, cumbersome and uncertain judicial method, the so-called gradual process of 'inclusion and exclusion' from case to case, in arriving at principles, in a word, in arriving at more definite sub-standards of a vague statutory standard such as 'public interest, convenience or necessity' . . .
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> "It is precisely by the legislative method that a body of experts working in a specialized field can make the greatest contribution toward 'filling in the gaps' of the legislative policy (or lack thereof) fixed by Congress. Dealing intensively and continuously in a narrow field they learn (or should learn) rapidly what rules of conduct are needed . . . Why is it that administrative agencies are so backward about exercising these powers? Why do some of them shy away from an attempt to work out definite rules in advance, so that the citizen may be advised of his rights and duties and all citizens may be treated uniformly? Why do they insist, to so large extent, on importing all the excess baggage of the common law case method from the courts? I fear that in part at least the reason is that the case method involves less day-by-day effort and postpones the occasion when Beowulf must grapple with the monster of fundamental principles." [25]

The extent to which the Board provides guiding rules is a matter within the discretion of the Board. It can respond to facts shown to exist or to facts it observes and experiences. Equally, it can ignore them until they indicate urgent problems. The facts can be presented to it by interested persons in a formal hearing. In such a case the speed of its response and the thoroughness with which it acts are

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[24] *S.E.C. v. Chenery Corp.*, 332 U.S. 194 (1947).

[25] *Federal Communications Procedure*, Louis G. Caldwell, 7 George Washington L. Rev. 740, pp. 757-758.

matters over which it has complete control and discretion. They are qualitative matters and no legal responsibility to act in a prescribed way (within the ambit of existing authority) can be shown nor do parties have any rights to the promulgation of a specific type of regulation.

Present procedure necessarily results in considerably less than a comprehensive coverage of the field. Up until recently, for example, the Board had not issued any regulations governing charter and special services and it is doubted if anyone had a right to a regulation on the subject regardless of the confusion such a failure to act may have created.[26] It is recognized that there are strong pulls away from controlling by regulations. In my opinion the Board can legally refrain from issuing any regulation, or issue only meagre regulations to implement the Act.

In effect, formal Economic Regulations are avoided by case-by-case regulation by the Board itself or by staff give and take in correspondence and conferences with representatives of the air carriers. Where there are a variety of circumstances to be dealt with which can not be perceived in advance this is desirable and necessary. This is invariably the case where the problems are new, and the methods used by the airline industry new and changing. Its problems were at one time varying and specialized in nature. Future problems could not be forseen nor could their nature be gauged accurately by the Board or the industry. In the absence of experience or necessary foresight the case-by-case method is a legitimate way of crystallizing tentative judgments into rules.

These pressures away from the use of regulations, notwithstanding, it is believed that there are compelling reasons of public interest, if not of law, which impose a responsibility to resort to a more intensive use of regulations and specific interpretations for defining conduct. A statement, attributed to Charles Evans Hughes, fortifies this conclusion:

> "The greatest assurance against an unsound rule of law is a machinery by which its nature is made known and whereby any departure from its uniform enforcement will be revealed to public gaze. This is provided to a considerable degree by the legislative method, and is not provided by the case-to-case method. The latter permits the agency to avoid stating the principle which it is really applying and to conceal discriminations in the verbiage of findings and conclusions of fact."

The purpose of a regulation or an interpretative statement is to inform the industry in detail as to the conduct the Board expects it to follow in those cases in which regulations are authorized. A regulation

[26] A regulation was proposed January 18, 1950, 15 F.R. 298, by Notice of Proposed Rule Making, Draft Release No. 42, and February 15, 1950, 15 F.R. 827, Draft Release No. 42-A. A regulation on this subject has recently been adopted as Part 207 of the Economic Regulations, 16 F.R. 2700, March 28, 1951. Over a year elapsed before action was taken on the draft proposal. The authorization to regulate the subject has been in the Act since 1938.

is a quick method of discharging such a responsibility with equality of treatment to all persons in the same situation. The cumbersome and uncertain case-to-case judicial method of arriving at principles is not a satisfactory way of meeting a responsibility to solve such problems as, for example, informing the industry of conditions of public interest which justify an authorization for a temporary suspension of service or for a change in tariffs on less than the required number of days' notice. A decision and an order do not advise each and every member of the industry in advance of his right and duties, and he is not assured equal treatment with his competitors. The judicial method only informs the participants in the case.

The so-called irregular air carriers, for example, until recently had to go to the Page Airways Inc. Investigation decision and to the Investigation of Nonscheduled Air Services decisions [27] in order to determine some of their duties. From these decisions they had to abstract general principles as announced in connection with the facts in those cases and apply them to their own situation. Is it any wonder that they have, in the past, been uncertain – as they professed to be – as to their duties; and, having a lot of money tied up in their venture, that they gave themselves the benefit of any doubts in applying a general principle to themselves? Temporary success with this procedure led them to invest more, they continued with no clear interpretation of the Act to guide them, until now the activities of some of them appear to be nothing but transportation bootlegging.

The feeder line operator is another party who may be bedevilled by uncertainty as to the law applicable to him. A feeder is generally one whose certificate has a duration of three years and requires stops at all points named therein.[28] Uncertainty exists both as to the time and manner of renewal of such certificates – obviously a matter of some importance to those having an investment in equipment and having management responsibilities for such a line. An applicant for a route knows he is only being given a three year life when a decision is rendered on his application and that during such period his "experiment" will be "watched" by the Board.[29] It is believed that the Board could fulfill its responsibility to be of service to the public and to investors if it would announce in advance its conditions for extending approval of temporary local service.

The Board also allows a six-month period for getting feeder operations under way before the three years period begins.[30] This too could be announced by a general statement instead of stating the principle from time to time in Board decisions. This period may be further extended upon "appropriate showing" (not otherwise defined) to

[27] 6 C.A.B. 1049, 1061.
[28] *Rocky Mountain States Air Service*, 6 C.A.B. 695 (1946).
[29] *Texas Oklahoma Case*, 7 C.A.B. 481 at p. 528.
[30] *New England Case*, 7 C.A.B. 27.

the Board that new equipment is not yet ready. This is still another rule that is buried in decisions.

In two early cases the Board stated its opinion that

> "the legal restrictions contained in Sec. 408(b) of the Act prohibit as a matter of law the entrance of a surface carrier into air transportation . . . unless such authorization would promote the public interest by enabling the surface carrier to use aircraft to public advantage in its operation." [31]

This would appear to be a flat rule of interpretation regarding a statutory standard which guides the Board in determining whether public convenience and necessity require the issuance of a certificate under Sec. 401 (d) (1) of the Act. The rule was made final in American President Lines et al., Petition.[32] A general announcement of this principle by interpretative regulation would forewarn the industry in this regard.

These cases, as well as others which could be cited, indicate that the Board's procedure occasionally has unfortunate results. For lack of published principles, air carriers are forced to hazard their own guesses as to what would constitute acceptable performance and the ultimate results can be inimical not only to the carriers but to the public interest. The intrinsic construction of the Act argues for coherent economic regulations closely derived from specific authorizations. The practical effects of proceeding without such a set of regulations evidence the necessary shortcomings of an alternative course.

A need for more regulations in certain areas is consistent with a need for more strict observance of the authority to promulgate differing types of regulations. Once an authority clearly has been shown to legislate by regulation, the authority can be exercised with thoroughness and detail as to the required conduct. Once a need has been shown for an interpretation of the Act by the establishment of policy and guiding principles, they can be stated by further regulation. It is therefore suggested that the potentialities for more regulation through the Economic Regulations could be exploited with benefit to the industry through a more complete understanding of what conduct the Board expects and advance statement of what policies and interpretation the Board expects to follow in the future administration of the Act.

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[31] *American Export Lines, Control—American Export Airlines*, 3 C.A.B. 619 (1942).

[32] 7 C.A.B. 799, March 19, 1947.

INTERNATIONAL AIRLINE COLLABORATION IN TRAFFIC POOLS, RATE-FIXING AND JOINT MANAGEMENT AGREEMENTS

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IN the 32 years which have passed since the beginning of international airline operations in 1919, it has become apparent that flying is the most expensive form of transportation and that scheduled services are generally unable to survive without government subsidies. Modern planes and navigational aids have increased safety and decreased operating costs to such an extent in the past decade, however, that several companies may be carrying enough traffic and earning enough to become self-sufficient in the not too distant future. The "Big Four" [1] American carriers have already done so.[2]

But those U.S. operators are not typical of the airlines of the world, for the "Big Four" are flying routes (a) of medium length (b) between large metropolitan centers (c) in a rich populous country (d) with highly developed commerce and industry and (e) a superior level of income. The routes are frequently much shorter in Europe, and less economical to operate.[3] The development of traffic has been inhibited by the fact that air fares are higher than in the U.S.A. and average earnings lower. There is also good cheap surface transportation which continues to provide real competition.

In addition, European flying services are competing with each other for almost every country on the Continent has one or more airlines. For over three decades, the problem of competition has been of primary importance to the airlines of Europe and the division of traffic has been so painful economically that a number of methods have been tried in efforts to minimize the "harmful effects of excessive competition."

While it is universally recognized that air transportation is an industry so touched with national interest that it must be treated as a

[1] American Airlines, Trans-World Airlines, Eastern Air Lines and United Air Lines are the four largest U.S. domestic air transport operators.

[2] D. W. Rentzel, Chairman, C.A.B., "The Current Position of American Air Transportation," an address before the Aviation Writers Association in Washington, D. C., on January 11, 1951.

[3] It is well recognized that certain routes are too short to permit the most effective utilization of transport aircraft and crews.

public utility, the question of just how much regulation and competition are desirable has yet to be resolved. Both governments and carriers have been concerned, and have resorted to a number of arrangements to encourage "cooperation" and lessen the impact of competition.

There have been many relationships between the airlines and between the governments and the carriers, ranging from agency and/or inter-line agreements to the advanced consortium of the Scandinavian Airlines System. They may all be described as forms of "cooperation," although some tend to retard the growth of air transport while others open vast new vistas. In considering these miscellaneous stages on the long road to international ownership and joint operations, it should be kept in mind that most of the signatory companies were and are "chosen instruments" with close economic and political support from their governments. A rival operator reluctant to agree to such "cooperation" might find it almost impossible to secure essential landing rights.

History of the Pooling Arrangements

According to the French Ministry of Foreign Affairs,

> "Historically, international cooperation in air transport seems to have appeared initially and mainly in the form of commercial cooperation, the purpose of which was not to eliminate competition between airlines but rather to attempt to limit the unfavorable repercussions of competition for both parties." [4]

There are those who doubt whether it has achieved its purpose. Among the most common forms of commercial cooperation has been the "pool," an inter-carrier contract with a long history and wide use:

> "These pooling arrangements are generally limited to commercial matters: pooling of revenue in a common fund to be allocated in proportion to the mileage flown, agreement on flight frequencies and schedules, with the consequence that commercial and financial services are performed in each country by the national airline on behalf of the associate company.
>
> "Pooling arrangements still permit a considerable amount of competition and, therefore, only solve a small part of the problem; nevertheless, in view of the economies made possible, and the fact that they avoid dispersion of effort, and since experiments have proved the effectiveness of the system, such arrangements deserve a special place in the list of methods of international cooperation which have already been tested." [5]

Pool partners have consistently refused to make public the terms of their carefully negotiated understandings lest the information be of

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[4] "Memorandum on International Ownership and Operation of Air Transport" submitted to ICAO by France, A4-WP/8 EC/3 Appendix D March 1950, p. 16.

[5] *Ibid*, p. 17.

assistance to other carriers. Additional light was cast on the pre-war pools of Lufthansa [6] by a U.S. intelligence team which reported that:

> ". . . both revenues and expenses were pooled and subsequently prorated based on several formulae, one of which involved the use of 'kilometers flown' as the basic yardstick. Another was based on the number of seats made available although not necessarily used. This pro-ration allowed an equitable distribution of both expenses and revenue, and was a definite means employed in the control of competitive operation." [7]

It was not always possible to negotiate pool arrangements, for some carriers refused to be forced into uneconomic "cooperation." An example of this may be seen in the deal which Italy offered Britain two decades ago. Imperial Airways sought permission to cross Italy en route to India, and the Italian government asked in exchange landing rights in Alexandria and

> "demanded a pooling of the income, from both passenger and mail traffic, for the whole route from England to India, of which pool the Italian company was to receive one-half of the total. In the previous twenty-five weeks, the Italian company had not carried a single paying passenger. The result of these extravagant demands was to divert the route from Italy to central Europe." [8]

Willingly in some cases and reluctantly in others, most European airlines have entered into pools. The two big new carriers of the post-war period, British European Airways and the Scandinavian Airlines System, have been noticeably unenthusiastic about participating in such restrictive arrangements and have given evidence of their confidence in their ability to get along in free competition.

The pool is not limited to Europe, although it has found the greatest acceptance on the Continent. It may be found in South America too, where the Uruguayan carrier CAUSA is operating the Montevideo-Buenos Aires route in pool with the Argentine airline ALFA [9] and the Colombian operator LANSA is running the Bogota-Caracas service "in conjunction with LAV" [10] of Venezuela.

Although subject to a great deal of economic regulation as public

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[6] Tome 1, Revue Generale de Droit Airien (1932), p. 514 lists 15 of the pools in which the Deutsche Lufthansa participated in a report on cooperation in civil aviation.

[7] U.S. Technical Industrial Intelligence Committee study on *"The German Commercial Air Transport Industry and Related Aeronautical Developments and Activities,"* available from H.M.S.O. London as Combined Intelligence Objectives Sub-committee Item No. 25-28, p. 30.

[8] TOLLES, *"A History of French Subsidies to Commercial Aviation,"* 161, Vol. XVIII, Smith College Studies in History, July 1933.

[9] Foreign Air Transport Division, C.A.B., *"Airlines of South America,"* April 5, 1949, p. 103.

[10] *Ibid*, p. 79.

[11] Among the inter-carrier agreements which must be filed with the C.A.B. are those for "pooling or apportioning earnings, losses, traffic, service, or equipment."

utilities, the United States airlines have not been barred by law from pools. Indeed, Section 412 [11] of the controlling Civil Aeronautics Act of 1938 requires that pool contracts be filed with the Civil Aeronautics Board and implies that such agreements are legal. Section 414 goes on to exempt the airlines from anti-trust legislation. The U.S. carriers have developed in the traditional American spirit of competition,[12] and there are many observers who attribute their growth in large part to such healthy contest. The C.A.B. has done its best to insure compliance with the "Declaration of Policy" in Section 2 of the 1938 Act which calls for "competition to the extent necessary to assure the sound development of an air-transportation system properly adapted to the needs of the foreign and domestic commerce of the United States, of the Postal Service, and of the national defense." The Board has also tried to prevent "unfair or destructive competitive practices." [13]

It might also be noted that British Overseas Airways Corporation is engaged in joint operation with South African Airways between London and Johannesburg [14] and with Qantas Empire Airways between London and Australia.[15] These arrangements are part of the long range program for British air transport cooperation which has resulted in the Commonwealth Air Transport Council [16] and its subsidiary bodies.

A majority of the early pools [17] were purely inter-carrier deals, but in recent years a number of governments have taken an increasing interest in the economic affairs of the "chosen instrument" airlines which they have been protecting and supporting. Several countries have shown concern lest foreign operators flying to and through their territories should offer too much capacity, *i.e.*, run more services than the normal traffic would justify, and take "too much" of the traffic.

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[12] The competition was particularly fierce before the Act of 1938, and remains strong today in different forms.

[13] Para. (c) of Sec. 2.

[14] The study of South African Airways compiled by C.A.B. in 1946 reported that "one of the important decisions reached at the Southern Africa Air Transport Conference held in Capetown on March 20, 1945 was to establish an air service between London and Johannesburg to be operated jointly by Great Britain and the Union of South Africa with British aircraft."

[15] "*Civil Aviation in Australia and New Guinea*," 10 Commonwealth Air Transport Council Newsletter 3, 6—January, 1949.

[16] "The Council was set up as a result of informal Commonwealth conversations in which representatives of Canada, Australia, New Zealand, the Union of South Africa, Southern Rhodesia, India, Newfoundland and the United Kingdom participated, held in Montreal in October 1944 and continued in London in December the same year, when a resolution was passed in favor of constituting a Council of a consultative nature to discuss matters affecting Civil Aviation of common interest to the Commonwealth countries." CATC Doc. CIV, 23890, p. 1.

[17] For a "sample" pool text, see Tome 1, Revue Generale de Droit Aerien (1932), pp. 515-521. The Air Transport Bureau of ICAO has made a study of the pre-war agreements, but has not released that document for public distribution.

The Fifth Freedom [18] traffic has been a major source of disturbance, despite the general acceptance of the Bermuda principles.[19]

France has been especially anxious about this question, and made it clear in her November 9, 1949 report [20] to the International Civil Aviation Organization:

> "Most of the bilateral agreements concluded to date include special provisions regarding the capacity to be operated on the services in which both countries are interested.
>
> "In certain of the agreements signed by France, special provisions are included in respect of this matter for particular services.
>
> "This is the case, for instance, with:
>
> (1) the Franco-British Agreement of 28 February, 1946 for services between Metropolitan France and the United Kingdom. This agreement provides for arrangements to be agreed between Aeronautical Administrations for the determination of capacity to be operated, and it specifies that: 'the frequency of the services, the time-tables and in general the conditions under which services shall be operated jointly and in pool by the designated airlines' are to be determined by agreement between the companies.
>
> (2) the Franco-Portuguese Agreement of 30 April 1946 for services connecting Metropolitan France and North Africa with Portugal and for the regional colonial services in which both countries are concerned.
>
> This agreement provides for the same arrangements as above between Aeronautical Administrations and between operating companies, but provision is also made for the possibility of third countries operating services on the routes involved, and it is specified that, if this occurs, 'the French and Portuguese airlines concerned may, with the approval of their respective Aeronautical Authorities, conclude agreements with the airline or airlines of such countries with a view to establishing procedures for cooperative operations based on similar principles.'
>
> (3) the Franco-Irish Agreement of 16 May 1946 which provides for arrangements between airlines with a view to the possibility of 'joint and pooled' operation of services between Paris and Dublin.
>
> (4) the Franco-Swedish Agreement of 2 August 1946, modified on 22 April 1947, which provided for an initial joint examination by the Aeronautical Authorities of both countries of 'the possibility of a pooling arrangement between the companies operating on the Stockholm-Paris and Stockholm-Malmoe-Copenhagen-Paris routes.' Discussions to this effect took place in April 1947, with the participation of the companies concerned, and both the French and Swedish Aeronautical Authorities recognized in an exchange of letters dated 22 April

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[18] This is the term applied to the privilege granted to the carrier of one country to pick up traffic in a second nation on a reasonably direct line between the homeland and a third country under Section 1 of Article I of the International Air Transport Agreement prepared as Appendix IV to the Chicago Convention, PICAO Doc. 2187, p. 71.

[19] Signed by the U.K. and U.S. on February 11, 1946, the Final Act of the Bermuda Conference sets forth the principle (6) that "capacity should be related: (a) to traffic requirements between the country of origin and the countries of destination; (b) to the requirements of through airline operations, and (c) to the traffic requirements of the area through which the airline passes after taking account of local and regional services."

[20] "Memorandum on International Ownership and Operation of Air Transport" A4-WP/8 EC/3 Appendix D 24 March 1950, pp. 18-19.

1947 that they had 'taken cognizance of the expressed intention of the airlines . . . to conclude an agreement with a view to setting up joint operations, due consideration being given to economic traffic data.'

(5) the Franco-Italian Agreement of 3 February 1949, which provides for an understanding between the airlines designated to operate services between France and Italy on the routes specified in the agreement, this understanding 'to take into consideration the capacity to be operated by each of the airlines, and accordingly to determine the frequency of services, the allocation of schedules, and, in general, the manner in which operations are to be conducted.' "

A joint Standing Franco-Italian Committee has been established to monitor traffic and implement the capacity clauses, and there is a similar body to discuss capacity problems with the United Kingdom. Great Britain was a signatory to the Bermuda Agreement, and has not been too enthusiastic about France's insistence on such capacity controls. The United States has been even less willing to accept such restrictions on the operations of T.W.A. and Pan American World Airways to and through Paris, as has been clear in the recent Franco-American negotiations for revision of the bilateral agreement between those governments.

But Italy has been pursuing a policy similar to that of France, and has withheld permanent permits for certain airlines that were not willing to "cooperate," *i.e.*, pool with Italian carriers. Italy's utilization of the concept of capacity controls has been much less reasonable than that of France, and can probably be attributed to the concern of civil aviation officials in Rome over the post-war weakness of the Italian airlines. The Swiss have been busy protecting their ambitious carrier, taking advantage of their geographical position athwart the route to the Mediterranean and Asia to force through-north-south operators into pools with Swissair.

Joint Uniform Fares and Charges

Another form of "cooperation" is the rate-fixing agreement, a prewar practice which was institutionalized with the creation of the International Air Transport Association in Havana in April, 1945. All the important scheduled airlines outside the Soviet orbit now develop joint uniform passenger fares and freight charges at the three annual regional traffic conferences [21] of that trade association. These rates are subject to the approval of the governments, which accept the device of the traffic conference as a time-tested method of avoiding certain economic and political problems in publicly regulated transportation. IATA provides the airlines with a private forum for discussion of international fares and charges, while the carriers deal with their own governments in establishing fares for domestic services.

It should be noted that there are both advantages and disadvantages in setting rates in traffic conference, a system with a long maritime his-

[21] See J. G. Gazdik, "*International Rate-Making*," 9 IATA Bulletin 61, July 1949.

tory. Although subsidy-supported rate wars are avoided and their nasty political by-products eliminated, some of the incentives present in free competition are also absent. The rates and charges are often based on the operating costs of the less efficient carriers, and it may take a long time to achieve the reductions made possible by modern aircraft, efficient organization and good cost control systems. Some of the airlines outside IATA argue that it is based on "cartel thinking," while the member carriers point out that all kinds of transport rates are set by public utility commissions and traffic bodies in many countries.

In considering IATA, one might also take into account the great amount of technical cooperation which the members achieve through that trade association of scheduled carriers in international service. In addition, there are the important technical annexes of ICAO which have done so much to achieve standardization of operating procedures, rules of the air, etc.

> "In listing examples of cooperation, it is interesting to note that, in the field of international operations, a number of airlines have made their own facilities available to other operators over the same route. An instance of this is the hotel accommodation provided by Trans-Canada Airlines at Goose Bay, the operating cost of which is shared by other airlines using the airport as a stopping place. Another example is the Pan American Airways G.C.A. blind landing aid which is available to all airlines operating through Gander.
>
> "The establishment of International Aeradio, Ltd. is another interesting example of cooperative spirit. The services provided by this Organization in countries where adequate air safety could not otherwise be provided are a good illustration of the value of collective effort.
>
> "It is particularly desirable that joint efforts should be exerted also in the field of airway facilities, including airports, so as to improve facilities available and to save Governments useless expenditure . . . In this connection, France and Switzerland have built an international airport at Bale-Mulhouse . . ." [22]

The benefits to be derived from technical cooperation, such as the vital ICAO program for joint support of weather stations on the North Atlantic and airway facilities, have been obvious to both carriers and governments for some time. A good deal of important progress has

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[22] *Opus cit.*, note 20, p. 20. "The airport was established by the French and Swiss Governments as a public corporation. It is located on French territory and is controlled by a Council half of whose members are French and the other half Swiss. The Council is assisted by a Director and an Airport Manager (commandant d'aerodrome) with various subordinate officers.

"The French Government has made available to the airport those facilities which already existed and has agreed further to acquire and make available whatever land may be required for the airport or its facilities, as defined in the agreement. The Swiss Government, on the other hand, agrees to bear a portion, to be determined, of the capital expenditures.

"The public corporation is responsible for the operation of the facilities, but technical services, such as radio, flight control and ground control, are provided by the Governments themselves on a basis of allocation to be defined. Airline traffic, health, customs and immigration services are also provided by the States themselves, each one acting on its own behalf."

been the result of combined efforts to resolve technical problems.

Cooperation in the realm of economic and political aspects of international civil aviation has moved more slowly, for the issues are infinitely more complex. Inter-governmental efforts since the Chicago Conference of 1944 have not been too successful in the multilateral sphere and most countries are currently concentrating on bilateral pacts. The airlines, however, have proceeded to develop a number of interesting and varied relationships as they have realized that international cooperation need not be limited to attempts to soften the impact of "excessive" competition.

These arrangements have ranged from the simple contract which T.W.A. has to manage Saudi Arabian Airlines [23] to the advanced new scheme for international ownership planned by S.A.S. Some 10% of the stock of Iranian Airlines has been held by T.W.A. which also has a contract to manage that company. It is not unusual for one airline to have shareholdings in another,[24] with the extent of the investment determined by the objectives. A carrier may buy some stock with the thought of later expanding its holdings into control, or one airline may acquire such a big block of the other's securities that the purchaser has control. In 1947, the C.A.B. reported [25] that Pan American held between 20% and 100% of 17 foreign airlines and that T.W.A. had investments of between 10% and 40% in 7 others. B.E.A. and B.O.A.C. also have large holdings in widely scattered associated and subsidiary carriers.

Of course, a big share-holder will have a man on the Board of Directors to influence long-range policy and may also have a representative in the day-to-day management. These arrangements have been common in the Pan American subsidiaries in Latin America.[26] B.E.A. owns 40% of the Alitalia company and keeps a "Resident Director" in Rome to guide policy; the two carriers work together very closely. The other important Italian airline, L.A.I., is basically under the control of T.W.A. which holds 40% of the shares and plays an active role in the day-to-day management. It is generally felt that both B.E.A. and T.W.A. have made significant contributions to the recovery of Italian civil aviation and that this type of cooperative venture should be encouraged.

(To be continued)

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[23] Wholly owned by the government of Saudi Arabia.

[24] In general, see the "Survey on Ownership of Airlines," ICAO Doc. 4953-AT/633, February 1948.

[25] Exhibit 35 of April, May 1947, *Hearings on Overseas Air Transportation by Steamship Operators or a Consolidated Air Carrier* before the House of Representatives Committee on Interstate and Foreign Commerce, pp. 1350-51.

[26] It is not always easy to determine the amount of influence exercised by the parent company, and Pan American has never hesitated to deny that it has control if such a statement were convenient.

INTERNATIONAL

Department Editor: Joan H. Stacy*

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO)

TWELFTH SESSION OF THE COUNCIL (JANUARY 30-APRIL 13, 1951)

ONE of the most important matters which the ICAO Council had before it for consideration when it reconvened for its twelfth session on January 30, 1951 was the draft Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface. The ICAO Legal Committee had agreed that the new draft of the revised Rome Convention, which it had prepared at its seventh session in January 1951 in Mexico City, was a final draft insofar as the Committee was concerned, but that there were certain policy and economic matters which should be examined by the Council. Accordingly the Council, during its twelfth session, directed the Secretary General to prepare an analysis of the principal advantages and disadvantages to the general public and to the international airlines which would result from adoption of the draft Convention. The Air Transport Committee was asked to review the economic aspects of the Convention, particularly those in Chapter III (Security for Operator's Liability) and Article 11 (Limits of Liability). The Council decided to circulate the draft Convention immediately to all ICAO member States but not to request their comments until its own comments were available, which should be not later than December 1951. In addition, the Council voted to submit the draft Convention to the 1952 session of the ICAO Assembly, or to a special diplomatic conference to be held about the same date, for final approval and opening for signature.

In answer to an inquiry from Pakistan, the Council rendered an advisory opinion that the provisions of Article 6 of the Chicago Convention requiring "special permission" for scheduled international air services to operate over or into the territory of another Contracting State do not override Article I, Section 1 of the International Air Services Transit Agreement, granting the right of overflight and non-traffic stop to scheduled international air services of other contracting parties. While recognizing that the granting of the privileges of transit and landing for non-traffic purposes are subject to the requirements of other provisions of the Transit Agreement, the Council decided that it was not necessary to go into the details of these requirements.

The Council on February 20 approved the draft agenda for the Fifth Session of the ICAO Assembly.[1] In accordance with a decision of the Assembly in June 1950,[2] this year's session will be a limited one concerning mainly budgetary and fiscal matters. The only non-administrative or non-procedural item on the provisional agenda is Item 11, Filling of the Vacancy on the Council. Since only 20 States stood for election and were elected to the Council at the Fourth Session of the Assembly and since Article 50 of the Chicago Convention requires the Assembly to fill any vacancy on the Council as soon as possible, an election will be held to fill the vacant 21st seat if there are any candidates who can satisfy the requirement for furnishing full-

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* Aviation Policy Staff, Department of State.

[1] Scheduled to be convened at ICAO headquarters in Montreal, June 5, 1951.

[2] Resolution A4-6 provides for holding a major session of the Assembly once every three years and limited sessions in the intervening years. The 1950 session of the Assembly was a major session.

time representation in Montreal.[3] In addition, the Netherlands has given notice that it will attempt at the Assembly to place on the agenda an item which was turned down in the Council, Consideration of the Character and Scope of Future Sessions of the Assembly. In connection with preparations for the Assembly, the Council and its Finance Committee pared by $154,220 the 1952 budget recommended by the Secretary General, making the total gross budget to be recommended to the Assembly $3,341,336 and the net budget $2,906,209, as compared with a sum of $2,812,000 voted by the Assembly for calendar year 1951. The increase over the 1951 budget is attributable to the increased cost of the meetings program, prior commitments concerning the salaries of the Secretariat and unavoidable increases for general services resulting from price rises.

Political differences between ICAO member States in the Middle East had prevented the second ICAO Middle East Regional Air Navigation Meeting in the fall of 1950 from reaching a decision on the best location from a technical point of view for the flight information center for the newly established eastern Mediterranean flight information region. Therefore, the Council in March 1951 adopted a resolution requesting its President to make representations, at the highest level, to the States concerned in this region with a view to finding a suitable location for the center where complete flight information service would be given to all aircraft regardless of nationality, origin, or destination.

The President of the Council on April 14 signed the ICAO Headquarters Agreement with Canada, concerning the privileges and immunities to be granted the Organization by the Canadian Government. In accordance with a decision of the Council, members of the ICAO Secretariat were brought under the terms of the U.N. Joint Pension Fund as of March 1, 1951. The Council also voted to have the external audit of ICAO's books performed in the future by the Auditor General of Canada under the United Nations Joint Audit Scheme, rather than by a private firm under an independent system as in the past. The Council also approved the convening of the following ICAO meetings:

Search and Rescue Division, 3rd session, September 4, 1951, Montreal.
Legal Committee, 8th session, September 11, 1951, Montreal.
Aeronautical Maps and Charts Division, 5th session, October 9, 1951, Montreal.
South American/South Atlantic Regional Air Navigation Meeting, October 30, 1951, South America.
Facilitation Division, 3rd session, November 21, 1951, South America.
European-Mediterranean Regional Air Navigation Meeting, January 22, 1952, Paris (postponed from June 26, 1951).
Personnel Licensing Division, 4th session, February 19, 1952, Montreal.

Technical Assistance Program

In many of the underdeveloped countries of the world where physical features preclude the development of other forms of transport, air transportation is an essential prerequisite to effective economic development. ICAO has sent its first two missions abroad, one to Iran and one to Ethiopia, under the United Nations Expanded Technical Assistance Program. The 10-man mission to Iran and the 4-man mission to Ethiopia, which will aid in the development of civil aviation in those countries, consist of nationals of seven different ICAO member States who are specialists in airline operations, aircraft maintenance, aeronautical meteorology, air traffic control and aeronautical telecommunications.

[3] Resolution A4-1 provides that States giving notice of their candidacy for election to the Council undertake the commitment to furnish full-time representation at ICAO headquarters.

ICAO technical assistance projects have also been approved for Colombia, Egypt, Finland, Indonesia, Iraq, Israel, Lebanon, Nicaragua, Pakistan and Thailand. Arrangements are being made for the assignment to these countries of approximately 37 experts and for the awarding of approximately 32 fellowships. Agreements must be signed with each country prior to the departure of ICAO missions. The original requests by the various countries were modified somewhat after on-the-spot investigations last winter by members of the ICAO Secretariat. In several instances modifications have been made so as to focus attention on establishment of sound national aeronautics administrations, as an initial step in the promotion of safety, regularity and efficiency of civil aviation. Advisers and missions have in some cases been substituted for fellowship awards for study abroad, as a better method of dealing with particular problems in a particular country.

Originally ICAO was allotted 1%, or $200,000 of the $20,000,000 pledged by fifty nations to the United Nations Special Account for Technical Assistance for Economic Development for the period ending December 31, 1951. However, in view of the many deserving requests received for technical assistance, ICAO was able to obtain an additional $300,000 from the United Nations' own allocation of technical assistance funds. Argentina, Australia, Canada, Denmark, France, the Netherlands, India, Sweden, the United Kingdom and the United States have indicated their willingness to cooperate in the carrying out of the ICAO technical assistance program by recruiting experts for ICAO missions from among their nationals and by providing the training courses for ICAO fellows.

Air Navigation Matters

In line with the general shift of emphasis in ICAO's work from development of new international standards, practices, procedures, and regional plans to implementation of those already adopted, the Air Navigation Commission and the Council have been examining lists of critical deficiencies in air navigation facilities and services in the ten air navigation regions of the world. These deficiencies were selected by a working group from the total list as being those which definitely impair safety or impose operational limitations or economic burdens. As an initial step toward correction of these deficiencies, the Council has directed the Secretary General to assemble, on a priority basis, current information as to the intent of the States responsible for implementation, the nature of any difficulties they may have encountered and the ways in which such difficulties could most readily be overcome. Once this data has been collected, the Council will be in a position to consider the possible need for utilizing the ICAO technical assistance program or joint support program to remedy the deficiencies. Experience has already demonstrated that in some cases all that is needed to bring about implementation by responsible States of ICAO-recommended air navigation facilities and services is for ICAO to express an unusual interest in a particular deficiency.

On April 11, the Council adopted the thirteenth technical annex to the Chicago Convention, Standards and Recommended Practices for Aircraft Accident Investigation. The Council also adopted the following resolution dealing with the application of Annex 13 to aircraft accidents covered by Article 26 of the Chicago Convention:

> "WHEREAS Article 26 of the Convention provides that a State in which an accident to an aircraft occurs within the terms of the Article, will institute an inquiry into the circumstances of the accident in accordance, insofar as its laws permit, with the procedure which may be recommended by the International Civil Aviation Organization; and
>
> WHEREAS the Council, at its Eighteenth Meeting of its Twelfth Session, adopted Annex 13 on aircraft accident inquiry,

THE COUNCIL RECOMMENDS:

The Standards and Recommended Practices for aircraft accident inquiry contained in Annex 13 to the Convention, as the procedure to be followed by Contracting States for inquiries into accidents involving death or serious injury and instituted in accordance with the provisions of Article 26;

IT BEING UNDERSTOOD:

1. That States may, in accordance with Article 38 of the Convention, deviate from any provision of Annex 13, except that, with respect to accidents covered by terms of Article 26 of the Convention and pursuant to this Article, 'the State in which the accident occurs will institute an inquiry', 'the State in which the aircraft is registered shall be given the opportunity to appoint observers to be present at the inquiry' and 'the State holding the inquiry shall communicate the report and findings in the matter to that State'; and
2. That the procedure here recommended is not applicable when an accident to an aircraft indicates 'serious' technical defect in the aircraft or air navigation facilities', in which cases and until ICAO recommends a procedure to this effect, the inquiry shall be conducted in accordance with the national procedure of the State concerned subject to the obligations deriving from the provisions of Article 26.'

After considerable debate on the matter of language to be used in radiotelephony, the Council returned to the Air Navigation Commission for reconsideration pertinent sections of the proposed amendments to Annex 10, Standards and Recommended Practices for Aeronautical Telecommunications. The Commission completed its review of contracting States' comments on the draft Annex on Aerodromes, Air Routes and Ground Aids. The Commission also examined the report of the Fourth Session of the Rules of the Air and Air Traffic Control Division, completing its review of the amendments proposed on Annex 11, Standards and Recommended Practices for Air Traffic Services, and the rearrangement of Annex 2, Standards and Recommended Practices—Rules of the Air, and agreeing that they should be circulated to ICAO member States for comment. The Commission approved its report to the Council on amendments to Annex 3, Standards and Recommended Practices—Meteorological Codes, arising from the Third Session of the Meteorological Division.

The Council and the Air Navigation Commission reviewed the recommendations of the Special Meteorological Meetings for the African-Indian Ocean, European-Mediterranean and North Atlantic Regions, held in Paris in November and December 1950, thus bringing into effect the Regional Supplementary Procedures—Meteorology and their associated facility and service supplements at the same time as the revised Specifications for Meteorological Services for International Air Navigation. The Council also approved the Procedures for Aeronautical Information Services (AIS PANS) and the Instrument Approach-to-Land Procedures, submitted by the Air Navigation Commission. In accordance with a recommendation of the Commission, the Council abolished the Search and Rescue PANS in view of the coming into force on March 1, 1951 of Annex 12, Standards and Recommended Practices for Search and Rescue, which with one exception covers all provisions in the PANS. The Commission completed its review of the rearrangement of the Air Traffic Control PANS and agreed to their circulation to contracting States for comments.

Annex 8 sets forth international standards for ensuring airworthiness of aircraft when new but does not deal with the problem of continuing airworthiness of aircraft. Therefore, the Commission directed the Secretariat to send a letter to ICAO member States asking them to report on what they are doing to maintain airworthiness; their current procedures for exchanges of

technical reports of defects among manufacturers, operators and other States; and what part ICAO should play with regard to the problem.

Air Transport Matters

The Air Transport Committee, when it reconvened for its twelfth session on February 7, 1951, appointed a small working group consisting of representatives from Brazil, Sweden, the United Kingdom, and the United States, to examine the comments of ICAO member States on the resolutions drafted a year previously concerning multiple, discriminatory and unduly burdensome taxation. In the light of these comments and other relevant material, including a study prepared by a tax consultant appointed jointly by the United Nations (UN) and ICAO Secretariats, the working group decided to recommend adoption of three resolutions in substantially the same form as originally drafted and one additional recommendation. The resolutions and recommendation call upon ICAO member States to exempt foreign airlines on a reciprocal basis from taxes on fuel, lubricants, and other consumable supplies used in international aviation and from income and property taxes; also to reduce or eliminate to the fullest possible extent taxes on the sale or use of international transport by air. The Air Transport Committee and the Council approved the resolutions and the recommendation, which when implemented will represent a substantial accomplishment by ICAO in the economic field. Members of the UN Secretariat had raised the question as to whether the resolution dealing with reciprocal exemption from income and property taxes was consistent with the tax policy of the UN. Therefore, the Council decided, before formally adopting this resolution, to refer it to the next meetings of the United Nations Fiscal Commission and the Economic and Social Council (ECOSOC), with a view to ensuring that it is not inconsistent with any action or policy adopted by those bodies. For this reason circulation of all three resolutions and the recommendation will be withheld until September 1951.

The Air Transport Committee also devoted considerable time during its twelfth session to the interrelated problems of a definition of a scheduled international air service and the rights to be conferred under Article 5 of the Chicago Convention on non-scheduled international air services.

On the basis of generally favorable reaction by ICAO member States to the tentative resolution it had formulated in the spring of 1950 on the problems of registration and certification arising from delivery of aircraft by air, the Air Transport Committee recommended that the Council request States, where necessary, to implement the resolution as fully and as soon as possible. The following is the resolution:

> "WHEREAS compliance with Articles 29, 31 and 32 of the Chicago Convention gives rise to certain difficulties in the delivery of aircraft by air from the country of manufacture or last registration to a purchaser in the territory of another Contracting State, and
>
> WHEREAS these difficulties arise from the operation of the laws of Contracting States that restrict registration of aircraft to their own nationals and the practice of some Contracting States of withholding validation of certificates of airworthiness and licenses of personnel issued by another Contracting State until the aircraft or personnel concerned are subjected to examination within their own territory;
>
> THE COUNCIL RECOMMENDS THAT:
>
> 1. Where difficulties do arise in complying with the aforementioned articles of the Convention in the delivery by air to its territory of an aircraft purchased by one of its nationals, a Contracting State should
>
> (i) accept the aircraft on its register and issue a certificate or a provisional certificate of registration to the purchaser, which certificate may be made valid exclusively for the purpose of the delivery flight, if the State so desires;

(ii) arrange either for (a) validation of the existing certificate of airworthiness of the aircraft issued by the State of origin or last registration of the aircraft, or for (b) issue of an appropriate temporary certificate of airworthiness. Such validated or temporary certificate of airworthiness may be restricted to the purpose of the delivery flight and may be made subject to the condition, if so decided by the validating or issuing State, that no passengers or cargo shall be carried for remuneration by the aircraft during the delivery flight;
(iii) arrange, when necessary, for the licenses of the operating crew to be validated for the purpose of the delivery flight.

(NOTE: It is suggested that a State might arrange for validation or issue of the certificates and licenses to be done either by its diplomatic or consular representative or other authorized agent in the country from which the aircraft is to be delievred.)"

The ICAO Secretariat has prepared a revised and enlarged edition of the 1949 circular "Collected Airport Tariff Scales." [4] The new circular is entitled "Manual of Airport and Air Navigation Facility Tariffs" [5] and contains tariff scales relating to airports in forty-two States. Statistical Summaries Nos. 12 and 13 [6] on airline taxes and subsidies for 1947 and 1948 respectively have also been issued. These summaries contain data on approximately thirty airlines in some fifteen ICAO member States. No attempt has been made to analyze the statistics, but a single conversion into U.S. dollars has been made for purposes of ready comparison. Statistical Summary No. 14,[7] the latest in the series, shows country of origin and destination of international air passengers by airline and by country for March and September 1948. The data by country also includes figures for the same two months in 1947.

JOAN H. STACY

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[4] ICAO Circular 9-AT/2.

[5] ICAO Doc. 7100—AT/707.

[6] ICAO Docs. 7043—AT/705 of November 1950 and 7045—AT/706 of December 1950.

[7] ICAO Doc. 7094—AT/708 of January 1951.

FEDERAL

REPORT OF ERNST & ERNST ON SURVEY OF SEPARATION OF COMPENSATORY MAIL PAY FROM TOTAL MAIL PAYMENTS TO DOMESTIC AIRLINES

PART I — DISCUSSION [1]

A. Purpose

IN a document entitled "Invitation to Bid on a Contract to Make a Survey Covering Certain Aspects of Separation of Air Mail Pay from Subsidy Paid to Domestic Airlines" which was released by the United States Senate Committee on Interstate and Foreign Commerce under date of September 7, 1950, the purpose of a proposed broad survey of airline operations was stated to be

> "a survey or audit of airline operations to ascertain pertinent facts upon which to base rules to govern the separation of compensatory mail pay from Federal subsidy payments which go to airlines to insure satisfactory service." This document stated further
> "The Committee has already held hearings and made a preliminary study on separation of air mail pay from subsidy. An interim report covering that study is attached as guidance for prospective bidders to indicate the scope and nature of the work to be done. The study related the subsidy requirement to the losses incurred for the communities served. In the Interim Report this was done by first estimating the total subsidy required by the carrier as an operating whole and then this subsidy was prorated to the stations found to have been served at a loss."

In the contract covering our engagement, we were directed, as a specific objective of our survey,

> "to carry out, through comprehensive engineering and accounting studies and analyses, the program presented by the Interim Report." [2]

B. Scope

Provisions of the contract called for the relation of "subsidy" to the communities served, as outlined in the Interim Report, and certain data were prescribed by the Committee to be followed by us in relating "subsidy" requirements to the stations found to have been served at a loss during the year ended December 31, 1949, by the 16 domestic trunk and 17 local service airlines which were engaged in the carriage of mail on September 1, 1950.

While domestic carriers only were included, the following "stub end" stations situated beyond the borders of the continental limits of United States were, for purposes of the survey, considered as domestic stations: American Airlines, Inc.—Mexico City and Toronto; Colonial Airlines, Inc.—Montreal and Ottawa; Eastern Air Lines, Inc.—San Juan; National Airlines, Inc.—Havana; Northeast Airlines, Inc.—Montreal; Northwest Airlines, Inc.—Winnepeg and Honolulu; Western Airlines, Inc.—Lethbridge; and United Air Lines, Inc.—Honolulu and Vancouver.

C. Prescribed Assumptions and Contractual Requirements

The Senate Committee furnished certain data for use in the survey, including ton mile mail rates which were to be regarded as compensatory

[1] Part I has been shortened in certain minor respects and the detailed Appendix and several exhibits are omitted.

[2] See 17 J. Air L. & Com. 86 (1950).

rates for each carrier, minimum weight of mail loads for certain carriers, average investment of each carrier for the year 1949 and a percentage rate of return to apply against such prescribed average investment.

Aside from the contractual requirements to use the community approach and the aforementioned data relating to compensatory mail rates, minimum mail loads, subsidy, carriers' investment and rate of return, the methods and procedures to be followed in accomplishing the objectives of the survey were matters for our judgment and decision.

In view of the assumptions prescribed in performance of this survey, it should be recognized that "Compensatory Mail Pay" and "Subsidy" in our report are used in a somewhat qualified sense, since the amounts associated therewith can only be regarded as reasonable approximations, determined as outlined in the following paragraph (C-1). They should not be considered precise determinations of fair compensation for services performed in the carriage of mail and of "subsidies" paid to the respective carriers.

1. *Definition of "Compensatory Air Mail Pay" and "Subsidy."* "Compensatory air mail pay" as used in this report represents amounts resulting from application of the rates prescribed by the Senate Committee against the ton miles of mail handled, after certain adjustments made to reflect the minimum weight of mail loads likewise prescribed.

"Subsidy," as used herein, represents the difference between the actual amount of mail pay earned for the year (including retroactive adjustments) under either temporary or final rates established by the CAB and the computed amount of "Compensatory Mail Pay" resulting from use of the aforementioned mail rates and minimum mail load formulae. Retroactive mail payments made up to and including September 15, 1950, applicable to the year 1949, have been included in the mail payments shown for each carrier.

2. *Mail Rates and Minimum Loads.* The compensatory mail rates and minimum mail loads prescribed for use in the survey are as follows:

> 60 cents per ton mile—American, Eastern, TWA, United.
> 70 cents per ton mile—Braniff, Capital, Chicago & Southern, Delta, National, Northwest, and Western.
> $1.00 per ton mile—Colonial, Continental, Inland, Mid-Continent, Northeast and all other local service carriers, but, in computing the weight of mail carried, these five smaller trunk and all local service carriers may deem any mail discharged or received to or from any station served weighing less than 100 pounds to weigh 100 pounds.

3. *Amount of Investment.* The amount of investment of each carrier and the rate of return used were provided by the Civil Aeronautics Board through the Senate Committee. The amount of investment of each carrier was furnished to the Committee by the Board with the following comment:

> "The tabulation sets forth the average total assets in the beginning and ending balance sheets for the year 1949 on the basis reported to the Board by the air carriers with certain basic adjustments for items which are substantially nontransport or are not related to the air transport operations of the individual air carrier. The reported balance sheet figures include assets related to both domestic and international operations in the case of TWA, Braniff, Chicago and Southern, Northwest and Colonial Airlines. The domestic portion of the investment for these five carriers was estimated on the basis of total domestic expenses to total system expenses."

4. *Rate of Return.* The rate of return used for all carriers was 7% and is based on contents of a communication addressed to the Senate Committee by the Civil Aeronautics Board, the pertinent excerpt being as follows:

> "In respect to the rate of return, the Board has commonly used 7% in relation to retroactive periods."

5. *Field Surveys.* To develop a profit and loss statement for each of

the communities served by each carrier, field surveys were prescribed for purposes of determining and recommending the most feasible method of:

(a) apportioning all classes of commercial revenues and compensatory mail pay in an equitable manner among all stations served by each air carrier;
(b) identifying all distinguishable elements of ground and flight expenses, including capital investment, fairly among the stations served;
(c) allocating all remaining ground and flight expenses, including capital investment, and return on investment, fairly among the stations served.

Field surveys were intended, also, to devise techniques for determination in the future, in so far as practicable, of station profit and loss by type of service rendered, particularly as to all direct costs by each type of traffic or service. The resulting data would indicate the percentage ratio of (1) direct expense of mail service and (2) the direct expense of combined commercial services to total system expenses.

6. *Revision of CAB "Uniform System of Accounts."* As part of the engagement, the CAB Manual, "Uniform System of Accounts," was to be reviewed and recommendations made for any revisions which would facilitate the periodic preparation of station profit and loss statements in connection with future allocation of subsidies, and to make recommendations for the use of formulae and procedures to govern the preparation of station profit and loss statements in the future.

D. Performance of Survey

1. *General.* The headquarters of each of the selected thirty-three domestic trunk and local service carriers were visited at the outset of the survey. Conferences were held with top executives of each to acquaint them with the purpose and scope of the program both at headquarters and in the field, and to obtain their co-operation in accomplishing the desired objectives.

Meetings took place with the Chairman of the CAB and members of his staff, with officials of the Post Office Department and, by invitation of the Air Transport Association, we participated in two stated meetings of the financial officers of the carriers held under A.T.A. sponsorship.

2. *Extent of Headquarters and Station Field Surveys.* Analyses of the functions and number of personnel engaged in each type of service and other operations were conducted at headquarters organizations of 20 carriers. Eighty stations, located in twenty different cities and operated by twenty-five carriers, were the subject of field review. These stations handled approximately 50% of the entire passenger and cargo volume of certificated domestic carriers for the year 1949 and, from this comprehensive group, with their varying characteristics of organization, operating problems and density and volume of traffic, we believe that a representative cross-section of all domestic stations has been obtained.

E. Field Surveys

Field surveys were conducted for the purpose of identifying expenses directly applicable to station operations, as well as the performance of each type of transportation service at stations. These surveys were also utilized to select proper methods of allocating indirect expenses and to develop recommendations as to future procedures for identifying direct expenses and allocating "subsidy" among the stations served by each carrier.

1. *Headquarters and Station Analyses.* As an approach to these problems, studies were made at selected stations of the functions performed, during which methods of operations and related problems were discussed with station managers and employees. Time studies were conducted for the purpose of utilizing that technique, to its practical limits, to identify direct labor costs. Headquarters offices of 20 carriers were visited by our engineers. Pay roll records were analyzed to determine the number of employees en-

gaged in each function and, where practicable, the amount of time applicable to each type of service in each functional group.

It was found that the volume of passengers, mail, and cargo fluctuated throughout a twenty-four hour period and from day to day throughout an entire week. This condition is aptly illustrated in Nos. 360, 361 and 362 of Public Counsel's exhibits filed in the "Big Four" Rate Proceeding and Efficiency Investigation (Docket Nos. 2849 and 3663), wherein is indicated the variability of passenger ton miles and mail ton miles for each day of the selected weeks, for test purposes.

To obtain an all-inclusive result at stations, it would be necessary to observe conditions prevailing within a mobile work force continuously during a volume cycle of at least one week. To secure the desired information on a sufficiently broad scale, a means was needed to identify functions performed, segregated as to local and system-wide service, and a form was designed for recording the time spent by station personnel in performance of each function associated with each type of service. To insure broad and sufficient coverage of station operations, each carrier was asked to obtain from all stations served by them the information called for on this form as to the time spent by all employees in each function in each type of service for a period of one week. Station managers were also requested to indicate the number of employees engaged exclusively in each type of service. Completed forms were received from 751 stations (city ticket offices and airport stations in the same community being considered as one in this count) of the total of 928. The information thus collected constitutes comprehensive coverage of station conditions prevailing throughout the entire domestic air transportation system.

Our engineers also conducted field surveys at the 80 stations. Inasmuch as these stations handled approximately 50% of the entire passenger, mail and cargo volume of certificated domestic carriers for the year 1949, the results obtained may justifiably be considered representative of all stations. During the course of the surveys at these 80 stations the validity of the data already reported by the carriers themselves was verified, and the degree of correction required was found to be negligible.

From analysis of data acquired from station and headquarters surveys, it was disclosed that relatively few employees were engaged exclusively in the interests of mail service. In operations involving direct handling and accounting for mail, the functions in most instances were on a commingled basis in the interest of all types of service.

2. *Results of Station Questionnaire.* With respect to the forms received from the 751 stations to which reference has been made, a consolidation of data reported, for station functions only, for the period of one week, and verified to a negligible error factor by actual check at the 80 stations visited by us, reveals the following breakdown of station services by time, and their ratio to the total hours involved:

	Number of Hours	*Per cent to Total*
Mail service	27,647	3.3%
Express service	25,586	3.0
Freight service	39,626	4.7
Passenger service	82,769	9.9
	175,628	20.9%
Traffic and sales function, mainly applicable to passenger service	260,472	31.1
	436,100	52.0
All other station functions	401,395	48.0
	837,495	100.0%

It will be observed that only 3.3% of the total hours of approximately 20,900 station employees (837,495 hours ÷ 40 hours per week) were directly applicable to mail service. 48.7% of the total hours of station employees were reported as being identifiable with passenger, express and freight services.

The results shown cover local station operations only and, when all other pay roll hours (none of which is identifiable with type of service) are included, the total hours directly applicable to mail service represent only approximately 1½% of the total pay roll hours. Conversion of this time into dollars indicated that approximately 1.3% of pay roll costs were identifiable with mail service. In terms of the ratio of direct cost applicable to mail service to the over-all total costs of the carriers represented in the summary, only approximately .6% could be regarded as being applicable to this service.

In analyzing the total expenses of all trunk carriers for the year 1949, it was found that not more than 15% of the total expenses of these carriers could be identified with specific types of service, and that more than 80% of this percentage is related to passenger service.

F. Station Profit and Loss Statements for the Year 1949

An inherent characteristic of air transportation is that revenues are created and expenses incurred in the interest of serving all communities certificated to a carrier, and in this process stations become interdependent. It was found that in developing a profit and loss statement for each station served, the interdependency of stations raised the question as to which stations should be credited with revenues earned and which charged with expenses incurred, a problem not susceptible to precise mathematical solution.

Based on data available from carriers' records and upon our own judgment in processing data relating to carriers' revenues and expense, there is presented in the Appendix (not reprinted) the results obtained for the year ended December 31, 1949, with respect to that phase of the engagement involving development of a profit and loss statement for each community served and in relating the "subsidy" paid to the losses incurred at each station. The year ended December 31, 1949 represented the most recent calendar year period for which carriers' data were available. Exhibits "B" and "C" present summaries of over-all results of all carriers, segregated as to trunk and local service carriers.

1. *Reconciliation of Adjusted Net Profit or Loss Before Taxes on Income with Carrier's Reported Net Profit or Loss to the Civil Aeronautics Board.* These schedules (Exhibit C) are provided to indicate the various adjustments which were made by us to each carrier's profit or loss, as reported to CAB, in determining the carrier's profit or loss before "subsidy" and provision for taxes on income.

In reviewing carriers' records covering the year 1949, out-of-period or abnormal items not attributable to furnishing air transportation were noted and adjustments made to reflect properly the operating results for the year under review. The amount of income taxes charged against operating results for the year has been added to the amount of net profit reported on CAB Form 41, because it was necessary, for purposes of the survey, to reflect the amount of profit before taxes on income. Interest expense incurred on the use of borrowed capital and on other interest bearing obligations has been added to the reported amount of net profit, inasmuch as the amount of investment used in this survey included borrowed capital. Consequently, the amount of interest expense incurred has been eliminated from the computation of adjusted net profit to avoid duplication. To be consistent, dividends and interest received have been eliminated from reported net profit, since the

amount of capital investment in other companies, as previously mentioned, had been deducted by CAB before furnishing the amount of average investment of each carrier.

With respect to taxes on income, the effective rate of tax against each carrier's reported profit for the year 1949 varied considerably, due to the effect of loss carryover provisions in the Federal Revenue Act and because taxable net income determined pursuant to the Federal Revenue Code varied from net profit determined under CAB regulations. It was not practicable to attempt to reconcile these differences and recompute the amount of tax for each carrier for purposes of the survey. Instead, an assumed uniform rate of 40% has been used to cover Federal and State taxes on income.

Under this assumption, the prescribed net return of 7% on investment would be the equivalent of 11⅔% before provision for a tax deduction of 40%. Consequently, a rate of 11⅔% has been used and applied against the amount of investment furnished by the CAB to arrive at the amount of return to which a carrier would be entitled for the year. Such amount is indicated in the reconciliation schedule as "Provision for Return on Investment." In cases where a carrier was in operation for less than a full year appropriate adjustments were made in the amount used.

The sum resulting from addition of the amount representing return on investment to the amount of adjusted net loss before "subsidy" (or the subtraction thereof where an adjusted net profit before "subsidy" was indicated) represents the additional amount of income that would be required by a carrier to show a return of 11⅔% on investment before applicable income taxes at the assumed rate of 40%.

2. *Summary of Station Profit and Loss Statements and Allocated Mail Pay "Subsidy."* These schedules (Exhibit B) for each carrier show net profit or loss before "subsidy" and before taxes on income as to each station served by the respective carriers, together with amounts covering operating revenues, operating expenses and non-operating income or expense allocated to each station. The total amount appearing in the column "Net Profit or (Loss)" on this schedule is the same amount as that indicated on the previously mentioned "Statement of Reconciliation" schedule for the carrier under the title "Adjusted Net Profit or (Loss) Before Subsidy and Before Provision for Taxes on Income" (Col. 8, Exhibit C).

The total amount shown as provision for return on investment in this schedule has been allocated among stations on the basis of the ratio of total operating expenses allocated to each station to the aggregate total of operating expenses for all stations. We consider this method to be the most practicable and soundest available for this purpose.

The result of adding the amount representing provision for return on investment to the amount shown as loss before "subsidy" produces the amount representing a station's need for additional income from additional mail pay or from other sources (shown in parentheses). Where a profit before "subsidy" is indicated, the amount of such profit has been deducted from the amount representing provision for return on investment, since profits earned obviously reduce the amount of a station's need for sufficient income to yield a gross return of 11⅔% on the amount of investment.

In those cases where parentheses do not enclose the amounts shown in the "Standard Need" column, such amounts represent the excess profit earned over the amount required to yield the prescribed rate of return.

In considering the need of a carrier as a single entity, without regard to each station, those stations which would produce a profit in excess of the amount required to yield the prescribed rate of return would, in the final result of the carrier, reduce the amount of need. Therefore, in dealing with individual stations in this survey the total amount of excess profit of those stations showing such condition has been allocated among the stations show-

SUMMARY OF STATION PROFIT AND LOSS STATEMENTS AND ALLOCATED MAIL PAY "SUBSIDY"

ALL AIR LINES
For the year ended December 31, 1949

Exhibit B

	BEFORE "SUBSIDY" AND TAXES ON INCOME									
	OPERATING REVENUES	OPERATING EXPENSES	NET OPERATING INCOME OR (LOSS)	NON-OPERATING INCOME OR (EXPENSE)	NET PROFIT OR (LOSS)	PROVISION FOR 11.66-2/3% RETURN ON INVESTMENT	STANDARD NEED 1/	REDISTRIBUTED STANDARD NEED 2/	ALLOCATED "SUBSIDY" 3/	VARIANCE BETWEEN STANDARD NEED AND "SUBSIDY" 4/
DOMESTIC TRUNK LINES										
American Airlines, Inc.	$103,140,016	$ 93,712,755	$ 9,427,261	($ 135,735)	$ 9,291,526	$ 9,753,785	($ 462,259)		$ 465,857	$ 3,598
* Braniff Airways, Inc.	12,956,979	14,050,713	(1,093,734)	108,891	(984,843)	1,002,760	(1,987,603)		1,570,492	(417,111)
* Capital Airlines, Inc.	23,039,398	25,524,286	(2,484,888)	(69,206)	(2,554,094)	954,568	(3,508,662)		3,820,713	312,051
* Chicago & Southern Airlines, Inc.	7,147,646	7,783,557	(635,911)	(30,916)	(666,827)	430,083	(1,096,910)		1,436,084	339,174
Colonial Airlines, Inc.	3,404,353	4,220,236	(815,883)	(168,508)	(984,391)	224,488	(1,208,879)		1,040,779	(168,100)
* Continental Air Lines, Inc.	4,152,450	5,558,728	(1,406,278)	75,014	(1,331,264)	390,464	(1,721,728)		1,568,823	(152,905)
* Delta Air Lines, Inc.	14,065,111	15,109,172	(1,044,061)	207,473	(836,588)	1,135,846	(1,972,434)		1,738,982	(233,452)
Eastern Air Lines, Inc.	69,426,393	65,841,364	3,585,029	365,204	3,950,233	4,636,076	(685,843)		319,404	(366,439)
Inland Air Lines, Inc. 12/	2,177,829	2,192,030	(14,201)	(586	(14,787)	55,243	(70,030)		505,105	435,075
* Mid-Continent Airlines, Inc.	6,471,825	6,975,367	(503,542)	2,232	(501,310)	247,790	(749,100)		1,043,331	294,231
National Airlines, Inc.	12,680,224	14,331,065	(1,650,841)	6,195	(1,644,646)	746,356	(2,391,002)		1,395,594	(995,408)
Northeast Airlines, Inc.	4,356,871	5,666,445	(1,309,574)	(4,345)	(1,313,919)	465,843	(1,779,762)		1,369,837	(409,925)
Northwest Airlines, Inc.	26,091,606	28,456,602	(2,364,996)	402,156	(1,962,840)	2,880,710	(4,843,550)		1,183,918	(3,659,632)
Transcontinental & Western Air, Inc.	62,638,400	61,219,149	1,419,251	(697,780)	721,471	4,622,988	(3,901,517)		448,203	(3,453,314)
United Air Lines, Inc.	90,634,486	85,213,630	5,420,856	(759,093)	4,661,763	8,928,488	(4,266,725)		379,657	(3,887,068)
* Western Air Lines, Inc. 12/	7,311,129	8,411,380	(1,100,251)	(52,125)	(1,152,376)	881,718	(2,034,094)		1,548,467	(485,627)
Total Domestic Trunk Lines	$449,694,716	$444,266,479	$ 5,428,237	($ 751,129)	$ 4,677,108	$37,357,206	($32,680,098)		$19,835,246	($12,844,852)
DOMESTIC FEEDER LINES										
5/All American Airways, Inc.	$ 710,663	$ 2,425,538	($ 1,714,875)	($ 72,513)	($ 1,787,388)	$ 150,336	($ 1,937,724)		$ 1,276,828	($ 660,896)
6/Bonanza Air Lines, Inc.	7,690	34,861	(27,171)	(2,363)	(29,534)	910	(30,444)		16,907	(13,537)
7/Central Airlines, Inc.	24,400	140,557	(116,157)	905	(115,252)	8,130	(123,382)		119,515	(3,867)
Challenger Airlines Co.	546,319	1,466,449	(920,130)	(30,712)	(950,842)	22,534	(973,376)		907,585	(65,791)
Empire Air Lines, Inc.	386,430	900,799	(514,369)	(20,169)	(534,538)	46,199	(580,737)		602,316	21,579
8/Mid-West Airlines, Inc.	11,952	88,897	(76,945)	857	(76,088)	2,972	(79,060)		56,115	(22,945)
Monarch Air Lines, Inc.	541,495	1,553,288	(1,011,793)	(21,012)	(1,032,805)	61,610	(1,094,415)		1,034,600	(59,815)
Piedmont Airlines	1,310,575	2,348,929	(1,038,354)	(72,201)	(1,110,555)	87,661	(1,198,216)		1,016,641	(181,575)
Pioneer Air Lines, Inc.	1,818,017	3,031,136	(1,213,119)	(44,442)	(1,257,561)	103,167	(1,360,728)		1,484,980	124,252
Robinson Airlines Corp.	502,390	1,095,331	(592,941)	(71,470)	(664,411)	71,573	(735,984)		549,558	(186,426)

SUMMARY OF STATION PROFIT AND LOSS STATEMENTS AND ALLOCATED MAIL PAY "SUBSIDY"

ALL AIR LINES
For the year ended December 31, 1949

Exhibit B

	BEFORE "SUBSIDY" AND TAXES ON INCOME								
	OPERATING REVENUES	OPERATING EXPENSES	NET OPERATING INCOME OR (LOSS)	NON-OPERATING INCOME OR (EXPENSE)	NET PROFIT OR (LOSS)	PROVISION FOR 11.66-2/3% RETURN ON INVESTMENT	STANDARD NEED 1/	REDISTRIBUTED STANDARD NEED 2/	ALLOCATED "SUBSIDY" 3/	VARIANCE BETWEEN STANDARD NEED AND "SUBSIDY" 4/
DOMESTIC FEEDER LINES (CONTINUED)										
9/Southern Airways, Inc.	$ 148,351	806,036	($ 657,685)	($ 38,390)	($ 696,075)	$ 25,661	($ 721,736)		$ 542,559	($ 179,177)
Southwest Airways Co.	1,241,188	2,263,878	(1,022,690)	3,145	(1,019,545)	114,154	(1,133,699)		1,157,392	23,693
Trans-Texas Airways	688,937	2,310,879	(1,621,942)	(170,236)	(1,792,178)	74,908	(1,867,086)		1,379,000	(488,086)
10/Turner Airlines Corp.	8,885	42,497	(33,612)	(3,252)	(36,864)	2,252	(39,116)		19,385	(19,731)
West Coast Airlines, Inc.	580,681	1,264,091	(683,410)	(41,256)	(724,666)	79,182	(803,848)		673,183	(130,665)
11/E. W. Wiggins Airways, Inc.	6,516	44,547	(38,031)	(16,225)	(54,256)	5,912	(60,168)		21,593	(38,575)
Wisconsin Central Airlines, Inc.	344,853	1,337,831	(992,978)	(1,968)	(994,946)	64,795	(1,059,741)		1,040,881	(18,860)
Total Domestic Feeder Lines	$ 8,879,342	$ 21,155,544	($12,276,202)	($ 601,302)	($12,877,504)	$ 921,956	($13,799,460)		$11,899,038	($1,900,422)
Total Domestic Trunk & Feeder Lines	$458,574,058	$465,422,023	($ 6,847,965)	($1,352,431)	($ 8,200,396)	$38,279,162	($46,479,558)		$31,734,284	($14,745,274)

* Indicates carriers operating under final air mail rate

1/ AMOUNT NEEDED TO RECOVER ACTUAL LOSS INCURRED AND, IN ADDITION, TO PROVIDE A NET PROFIT AFTER TAXES ON INCOME EQUIVALENT TO 7% OF CARRIER'S AVERAGE INVESTMENT
2/ AFTER PRORATA DISTRIBUTION OF STATION PROFITS IN EXCESS OF PROVISION FOR RETURN ON INVESTMENT
3/ ALLOCATION OF AMOUNT OF DIFFERENCE BETWEEN ACTUAL MAIL PAY RECEIVED AND COMPUTED MAIL PAY AT ASSUMED COMPENSATORY RATES
4/ DIFFERENCE BETWEEN REDISTRIBUTED STANDARD NEED (OR STANDARD NEED WHEREVER APPLICABLE) AND ALLOCATED "SUBSIDY"
5/ Operated for the period March 7 to December 31, 1949
6/ Operated for the period December 19 to December 31, 1949
7/ Operated for the period September 15 to December 31, 1949
8/ Operated for the period October 21 to December 31, 1949
9/ Operated for the period June 10 to December 31, 1949
10/ Operated for the period November 12 to December 31, 1949
11/ Operated for the period September 19 to December 31, 1949
12/ Should be considered together

The excesses and deficiencies indicated in the "Variance between Standard Need and 'Subsidy'" column should not be interpreted as over or underpayments since the Civil Aeronautics Board necessarily evaluates other conditions not reflected in the actual one year figures in the development of rates for carriers, such as adjustments in equipment investment and in depreciation rates, the relative efficiency, average rate of return on investment over several years, etc.

ing a need on the basis of the ratio of each station's need to the aggregate total need of all stations in a need condition.

The amounts shown in the column entitled "Redistributed Standard Need" reflect the remaining need of each station after the excess profits of profitable stations were allocated among the stations showing financial need.

As previously mentioned, "subsidy" requirements were to be related to losses incurred at stations, and "subsidy" paid to each carrier was to be prorated among the stations found to have been served at a loss after provision had been made for return on investment. In accordance with this requirement, the amount representing "subsidy" for each carrier has been allocated among the carrier's stations in the ratio of the standard need (or redistributed standard need wherever applicable) of each station to the aggregate total standard need of all stations. The results of this procedure are indicated in the column headed "Allocated 'Subsidy.' "

The difference between the amounts of allocated "subsidy" and standard need (or redistributed standard need wherever applicable) are shown in the last column on the schedule entitled "Variance Between (Redistributed) Standard Need and 'Subsidy.' " The amounts in this column indicate the extent to which the allocated mail pay "subsidy" was inadequate, or more than adequate, in covering each station's need. Particular attention is directed to the footnote on the schedule which refers to amounts shown in this column.

3. *Summaries of Operating Revenues and Operating Expenses.* These schedules for each carrier are provided to show supporting details of the operating revenues and operating expenses shown in total only on the schedule "Summary of Station Profit and Loss Statements and Allocated Mail Pay 'Subsidy' " of each carrier. An explanation of the methods and procedures used in allocating each type of revenue and expense among stations is contained elsewhere in this report.

4. *Geographical Summary of Operating Revenues and Expenses and Comparison of Stations' Needs with Allocated "Subsidy."* These schedules show consolidated data for each community served arranged in alphabetical sequence according to States.

With respect to data shown on the schedules covering communities served, caution should be exercised in making comparison of results shown for each carrier serving the same community. Attention is directed to the footnote on these schedules indicating that certain carriers operated under final mail rates prescribed by CAB. Those carriers not so indicated, it is understood, have mail rate cases pending, the final results of which may materially change the amounts shown in the "Allocated Subsidy" column if applied on a retroactive basis. In making comparisons attention is also directed to comments appearing hereinafter regarding lack of uniformity among carriers in compilation of statistical data used in allocating revenue among stations.

While it is obvious that the amounts shown in the "Allocated Subsidy" column for carriers operating under final rates and for those operating under temporary rates are not comparable, we wish to point out that the procedure used in allocating "subsidy," previously described herein, can be employed in allocating further payments (made after September 15, 1950) to those carriers operating under temporary rates. Any further adjustments in mail payments applicable to the year 1949 can easily be distributed to the various stations served in the exact proportion that the original tentative "subsidy" was allocated. Such additional payments would not change the amounts shown in the "Redistributed Standard Need" column of the schedules.

SUMMARY OF STATEMENT OF RECONCILIATION OF ADJUSTED NET PROFIT OR LOSS BEFORE TAXES ON INCOME WITH CARRIER'S REPORTED NET PROFIT OR LOSS

EXHIBIT C

	NET PROFIT OR (LOSS) AS SHOWN BY SCHEDULE B-C.A.B. FORM 41	TOTAL ADDITIONS A/	TOTAL DEDUCTIONS A/	ADJUSTED NET PROFIT OR (LOSS) AFTER "SUBSIDY" BUT BEFORE PROVISION FOR TAXES ON INCOME	ACTUAL MAIL PAY RECEIVED	COMPUTED MAIL PAY AT ASSUMED COMPENSATORY RATES	"SUBSIDY" BEFORE APPLICABLE INCOME TAXES	ADJUSTED NET PROFIT OR (LOSS) BEFORE "SUBSIDY" AND BEFORE PROVISION FOR TAXES ON INCOME	PROVISION FOR RETURN ON INVESTMENT	STANDARD NEED BEFORE "SUBSIDY" AND BEFORE PROVISION FOR TAXES ON INCOME
DOMESTIC TRUNK LINES	1	2	3	4(1+2-3)	5	6	7(5-6)	8(4-7)	9	10(8-9)
American Airlines, Inc.	$ 6,511,237	$ 3,472,554	$ 226,408	$ 9,757,383	$ 5,875,057	$ 5,409,200	$ 465,857	$9,291,526	$ 9,753,785	($ 462,259)
Braniff Airways, Inc.	446,010	144,870	5,231	585,649	2,321,292	750,800	1,570,492	(984,843)	1,002,760	(1,987,603)
Capital Airlines, Inc.	1,681,670	434,376	829,427	1,266,619	4,567,313	746,600	3,820,713	(2,554,094)	954,568	(3,508,662)
Chicago & Southern Airlines, Inc.	470,851	313,063	14,657	769,257	1,800,384	364,300	1,436,084	(666,827)	430,083	(1,096,910)
Colonial Airlines, Inc.	48,664	15,819	8,095	56,388	1,225,679	184,900	1,040,779	(984,391)	224,488	(1,208,879)
Continental Air Lines, Inc.	(229,397)	470,167	3,211	237,559	1,852,903	284,080	1,568,823	(1,331,264)	390,464	(1,721,728)
Delta Air Lines, Inc.	450,967	463,373	11,946	902,394	2,369,382	630,400	1,738,982	(836,588)	1,135,846	(1,972,434)
Eastern Air Lines, Inc.	1,967,904	2,645,258	343,525	4,269,637	3,293,204	2,973,800	319,404	3,950,233	4,636,076	(685,843)
Inland Air Lines, Inc.	313,790	190,253	13,725	490,318	640,905	135,800	505,105	(14,787)	55,243	(70,030)
Mid-Continent Airlines, Inc.	340,024	202,619	622	542,021	1,467,276	423,945	1,043,331	(501,310)	247,790	(749,100)
National Airlines, Inc.	(20,731)	62,902	291,223	(249,052)	1,783,794	388,200	1,395,594	(1,644,646)	746,356	(2,391,002)
Northeast Airlines, Inc.	24,363	36,525	4,970	55,918	1,565,437	195,600	1,369,837	(1,313,919)	465,843	(1,779,762)
Northwest Airlines, Inc.	(1,325,181)	564,480	18,221	(778,922)	2,962,918	1,779,000	1,183,918	(1,962,840)	2,880,710	(4,843,550)
Transcontinental & Western Air, Inc.	722,543	1,197,793	750,662	1,169,674	5,719,927	5,271,724	448,203	721,471	4,622,988	(3,901,517)
United Air Lines, Inc.	2,249,406	2,888,671	96,657	5,041,420	7,071,167	6,691,510	379,657	4,661,763	8,928,488	(4,266,725)
Western Air Lines, Inc.	127,042	301,135	32,086	396,091	1,863,267	314,800	1,548,467	(1,152,376)	881,718	(2,034,094)
Total Domestic Trunk Lines	$13,779,162	$13,383,858	$2,650,666	$24,512,354	$46,379,905	$26,544,659	$19,835,246	$4,677,108	$37,357,206	($32,680,098)
DOMESTIC FEEDER LINES										
All American Airways, Inc.	($ 549,638)	$ 39,078	$ -0-	($ 510,560)	$ 1,347,428	$ 70,600	$ 1,276,828	($1,787,388)	$ 150,336	($ 1,937,724)
Bonanza Air Lines, Inc.	(5,316)	36	7,347	(12,627)	18,407	1,500	16,907	(29,534)	910	(30,444)
Central Airlines, Inc.	(21,604)	25,867	-0-	4,263	136,415	16,900	119,515	(115,252)	8,130	(123,382)
Challenger Airlines Co.	(53,132)	9,875	-0-	(43,257)	983,585	76,000	907,585	(950,842)	22,534	(973,376)
Empire Air Lines, Inc.	68,122	999	943	67,778	655,370	53,054	602,316	(534,538)	46,199	(580,737)
Mid-West Airlines, Inc.	(24,763)	4,790	-0-	(19,973)	64,115	8,000	56,115	(76,088)	2,972	(79,060)
Monarch Air Lines, Inc.	(13,774)	15,569	-0-	1,795	1,121,600	87,000	1,034,600	(1,032,805)	61,610	(1,094,415)
Piedmont Airlines	(55,958)	12,139	50,095	(93,914)	1,152,441	135,800	1,016,641	(1,110,555)	87,661	(1,198,216)
Pioneer Air Lines, Inc.	151,654	119,642	43,877	227,419	1,675,780	190,800	1,484,980	(1,257,561)	103,167	(1,360,728)
Robinson Airlines Corp.	(361,331)	246,478	-0-	(114,853)	588,358	38,800	549,558	(664,411)	71,573	(735,984)
Southern Airways, Inc.	($ 265,860)	$112,364	$ -0-	($153,516)	$ 583,559	$ 41,000	$ 542,559	($ 696,075)	$ 25,661	($ 721,736)
Southwest Airways Co.	81,143	57,375	671	137,847	1,249,992	92,600	1,157,392	(1,019,545)	114,154	(1,133,699)
Trans-Texas Airways	(153,768)	3,485	262,895	(413,178)	1,505,000	126,000	1,379,000	(1,792,178)	74,908	(1,867,086)
Turner Airlines Corp.	(18,111)	632	-0-	(17,479)	21,151	1,766	19,385	(36,864)	2,252	(39,116)
West Coast Airlines, Inc.	(61,190)	9,707	-0-	(51,483)	721,183	48,000	673,183	(724,666)	79,182	(803,848)
E.W.Wiggins Airways, Inc.	(45,567)	12,904	-0-	(32,663)	25,093	3,500	21,593	(54,256)	5,912	(60,168)
Wisconsin Central Airlines, Inc.	44,357	10,370	8,792	45,935	1,096,881	56,000	1,040,881	(994,946)	64,795	(1,059,741)
Total Domestic Feeder Lines	($1,284,736)	$680,890	$374,620	($978,466)	$12,946,358	$1,047,320	$11,899,038	($12,877,504)	$921,956	($13,799,460)
Total Domestic Truck & Feeder Lines	$12,494,426	$14,064,748	$3,025,286	$23,533,888	$59,326,263	$27,591,979	$31,734,284	($8,200,396)	$38,279,162	($46,479,558)

G. Treatment of Revenues and Expenses

1. *General*

In the course of allocating the various types of revenues and expenses to stations, certain problems were encountered with respect to variability of information available and in the method of its treatment by the different carriers. This statement should in no sense be construed as criticism of any carrier's accounting methods, but as indicative of the extent to which judgment and considerations of practicability were called for in the methods of allocation employed. The advantages of more uniform treatment and methods of reporting revenue and expense items by all carriers have been amply evidenced in the course of this study.

The CAB Manual, "Uniform System of Accounts," and the requirements of reporting on CAB Form 41 were not designed for purposes of determining the profitability or unprofitability of stations; consequently, the compilation of data readily to permit making such determination has not been a primary objective of a carrier's accounting system. It is, therefore, understandable that certain data which would have been of assistance in this survey as applied to the year 1949 were not available, or were not prepared in such form as to be helpful in obtaining uniformity in results.

Which of the communities served should be credited with the revenues earned, or charged with the expenses incurred, cannot be precisely determined because of the interdependency of stations. As a result, methods of allocation must be employed in developing profit or loss for each station served.

The methods used in allocating revenues and expenses in this survey are regarded as being the most practicable for use under the circumstances encountered, with due consideration to the significance of the amounts involved in the allocation process. Based on consolidation of the respective amounts of revenue for all carriers the relative significance of each is indicated by the following ratios:

Type of Revenue	*Amount of Revenue*	*Revenue Ton Miles*
Passenger	85.88%	78.44%
Other non-mail	8.10	16.55
Total non-mail	93.98%	94.99%
Mail at assumed compensatory rates	6.02	5.01
Total	100.00%	100.00%

With respect to operating expenses, the schedule of consolidation shows:

	Per Cent to Total
DIRECT EXPENSES	
Aircraft landing and takeoff	9.90%
Other	17.22
	27.12%
ALLOCATED EXPENSES	
Aircraft cruise	49.24
Ground operations	2.98
Aircraft control	2.65
Passenger service	6.63
Traffic, sales, advertising and publicity	6.16
General and administrative	5.22
	100.00%

2. *Revenues*

Revenues have been treated under the following classifications: (a) Passenger, (b) Excess baggage, (c) Mail, (d) Express and freight, and (e) Other.

a. *Passenger Revenue.* In considering possible methods of allocating passenger revenue to communities, it was found that there existed a lack of uniformity among carriers in the methods of reporting gross ticket sales at stations, as in many instances station reports included the value of transportation to be performed by other carriers, the value of round-trip transactions and the value of transportation which may have originated subsequently at some other point on the carrier's system. Also, in some cases, it was found that the carriers' reported value of gross ticket sales for the year was substantially greater or less than the value of the transportation service actually rendered and taken into the revenue accounts of the respective carriers. Many tests demonstrated that the use of gross ticket sales for purposes of assigning revenue to communities served should be eliminated from consideration.

Further studies indicated that assignment of revenue to communities served on the basis of the value of the transportation service there originating, and subsequently rendered, would appear to be appropriate for purposes of this survey. For their own requirements, most carriers regularly prepare what is known as an "O" and "D" (origin and destination) report covering passenger movements. However, in the preparation of this report, there was found to be a lack of uniformity among carriers in the treatment of transfers to connecting flights of the same carrier. In reporting the number of passengers handled in the origin and destination reports used in the survey, American, Eastern and Piedmont treated a transferred on-line passenger as an originating passenger at the station of transfer. In the case of all other carriers included in this survey, the "O" and "D" report did not include the station of transfer where an on-line transfer was made.

When a passenger transferred to an airplane of another carrier at a junction point, however, such passenger was recognized by all carriers as a deplaning passenger of one carrier and an enplaning passenger of the other carrier at the station of transfer. In such cases the respective carriers then took revenue into account based on the respective value of the ticket stubs lifted by each carrier.

In the course of developing profit and loss statements for the year 1949, it was not practicable within permissible time limits to eliminate the inconsistency of the various carriers in the treatment accorded on-line transfer. In our judgment, in allocating passenger revenue to stations the value of each ticket lifted as a result of transportation service actually performed should be split equally between the station of origin and the station of destination. However, because no carrier included in the survey had developed passenger revenue on such a basis for the year 1949, and because of the great difficulty of developing such data on a retroactive basis, we explored the feasibility of using alternative methods which would permit expediting the allocation process without significant sacrifice in accuracy.

Our analysis was approached on the premise that if the number of passengers enplaned and deplaned at a station were in balance as to miles flown, there would be no need to split revenue between stations. Tests were made to determine the degree of balance in passenger revenue generated out of a station and the passenger revenue generated into a station. In one test, passenger statistics from the September, 1948, and March, 1949, CAB traffic surveys were used. By comparing the number of enplaned with the number of deplaned passengers at each station, it was found, in the case of the Sep-

tember, 1948, period, that 89.6% of all passenger miles flown could be attributed to stations where the number of enplaned and deplaned passengers differed by less than 10%. For the March, 1949, period 86.3% of all passenger miles were attributable to stations with less than 10% difference between passengers enplaned and deplaned.

Another test compared the dollar volume of passenger revenue when credited to stations under two methods—(1) by station of origin only, and (2) by a 50-50 split between station of origin and station of destination. This test, applied to stations served by Delta, Eastern, National and Piedmont, showed that 87.4% of the total passenger revenue of these carriers could be attributed to stations where the variance between enplaned and deplaned passengers was less than 10%—thus:

Within Following Range of Variance—Less Than:	*Number of Stations (Cumulative)*	*Per cent to Total (Cumulative)*
1%	18	11.3
2	43	27.0
3	63	39.6
4	84	52.9
5	96	60.4
6	110	69.2
7	119	74.9
8	127	79.9
9	135	84.9
10	139	87.4
Over 10%	20	12.6
Total	159	100.0

Based on these tests, and from opinions expressed by many of the carriers, it was concluded that use of a method whereby stations of origin would be given credit for revenue attributable to enplaned passengers would be sufficiently accurate for use in connection with developing profit and loss statements for the year 1949.

In developing the amount of passenger revenue to be assigned to each station, available statistics covering origin and destination of enplaned passengers for each month of the year were consolidated to obtain a yearly total of passengers carried between each pair of stations. The value of a full fare one-way ticket between each pair of stations was then applied to the number of passengers carried between these stations. The resulting amount represented tentative revenue assigned to each station of origin. To reflect the effect of reduced rate transportation, such as round-trips, family plan and coach and excursion trips against the value of full fare one-way transportation, the tentative amount was reduced by a factor which represented the percentage rate necessary to reduce the tentative amount to the actual passenger revenue reported on Schedule B, CAB Form 41. The reduced figure then became the amount allocated to each station.

In some instances, a carrier's statistics were not available for each of the twelve months. In such cases, it was necessary to develop the average fare of a one-way trip from each station of origin, using whatever period for which origin and destination statistics were available. The developed average for each station was then extended by the total number of passengers enplaned at each station for the year and the resulting amounts reduced by applying a factor representing the percentage rate of deviation between the tentative and the reported amount of passenger revenue.

Where origin and destination statistics were available for coach transportation, they were used separately in allocating revenues. In cases where this was not possible the amount of revenue allocated was based on use of first-class fares only.

b. *Excess Baggage Revenue.* No instances were found where carriers compiled statistics covering the movement of excess baggage between pairs of stations. For purposes of this survey, revenues derived from this source have been allocated to the respective stations in the ratio of each station's share of allocated passenger revenue.

c. *Mail Revenue.* Under the Committee's directive, the amount of mail revenues to be used in the course of developing profit and loss statements of each station was to be the amount resulting from application of a prescribed formula against the ton-miles of mail flown during the year. With respect to those carriers subject to application of minimum load conditions, no practicable method was found to adjust the weight of each load enplaned or deplaned to a minimum of 100 pounds. To make such adjustments for each load would have required careful analysis of every manifest covering the movement of mail between each pair of stations on each flight made during the year 1949, obviously an impossible task in the time availaule.

To accomplish the intent of the Committee however, of giving special consideration to the small volume of mail carried by the smaller trunk line and all local service carriers, in computing an amount to be regarded as "Compensatory Mail Pay" the actual average mail load carried during the year was enlarged to a 100 pound average load and the "Compensatory Mail Pay" computed accordingly. In this process, a tentative "Compensatory Mail Pay" amount was computed by extending the actual mail ton-miles carried by the rate of $1.00 per ton-mile. The product of this computation was then divided by the actual average load and the resulting amount multiplied by 100 pounds. Thus, an adjusted "Compensatory Mail Pay" (Column 6, Exhibit C) amount was derived for carriage of an assumed average load of 100 pounds on each flight throughout the year.

In considering methods for allocating the amount of "Compensatory Mail Pay" among stations served by each carrier, it was found that very few carriers had statistics available covering the carriage of mail between each pair of stations similar to the type of statistics available covering the carriage of passengers. In view of this lack of origin and destination data covering carriage of mail, it was necessary to assume an average length of haul for purposes of allocating the total amount of "Compensatory Mail Pay" among stations served.

However, in this connection it was found that there was a considerably higher degree of directional unbalance in the movement of mail than was indicated from the tests made on the movement of passengers. This degree of unbalance in the movement of mail prompted the conclusion that weight of both enplaned and deplaned mail at each station, whenever available, should be used in the course of allocation.

While use of the ratio of the sum of pounds enplaned and deplaned at each station to the aggregate total pounds enplaned and deplaned was regarded as the most appropriate method for purposes of allocation, it was found that the number of pounds deplaned at stations was available only for the following carriers: American, Capital, Colonial, Delta, Eastern, National, Northwest, Piedmont, Pioneer, Southern, Trans-Texas, and Wiggins. Under such circumstances it was necessary to use the number of pounds enplaned only for all other carriers.

d. *Express and Freight Revenue.* Few carriers prepared statistics during the year 1949 covering the carriage of express and freight between pairs of stations. In reviewing methods for allocating the revenues derived from these sources, it was found that there was also considerable unbalance in the tonnage enplaned and deplaned at each station in these categories. It was

concluded that both enplaned and deplaned traffic should be used in connection with the allocation of express and freight revenues. However, the same situation was found with respect to availability of the number of pounds deplaned as was found with respect to mail and, in instances where deplaned pounds were not available, it was necessary to use the number of pounds enplaned only in the allocation process.

e. *Other Revenue.* Other types of revenue, such as charter service, non-transport revenue and incidental income, have been, wherever practicable, assigned to stations on the basis of the facts disclosed by an analysis of the accounts involved. Where the accounts did not readily disclose the desired information, nonscheduled transport revenue was allocated, based on the ratio of nonscheduled departures at each station. Other transportation revenue was allocated on the basis of the amount of passenger revenue credited to each station. Incidental revenues were allocated to the various stations on the basis of the amounts of general and administrative expense allocated to each station.

Particularly difficult problems arose in the allocation of revenues derived from charter service. In some instances, this service was performed between pairs of stations not regularly served by the carrier. Under such circumstances, the amount of revenue was credited to the on-line station at which the flight was negotiated or to the station at which the airplane was based prior to performing the charter service. The opinions of the respective carriers were generally used as a basis for allocation of this type of revenue.

3. *Expenses*

In dealing with operating expenses of each carrier, it was disclosed at the outset of our survey that serious problems would be faced in identification and segregation of expenses directly associated with operation of an airline station. Amounts reported quarterly by each carrier to the CAB, purporting to represent the direct costs of operating stations, in most instances have been of little value for purposes of segregating direct costs in the development of profit and loss statements for the year 1949. In many instances, some of the expenses reported in Schedule B-4, CAB Form 41, as station expenses were, by their nature, involved with matters beyond the scope of station activities when a station is viewed as an indepenednt unit. The varying conditions of operation, volume, geographical location and organizational set-up among carriers' stations created difficulties with respect to isolation of those expenses which were exclusively beneficial to a station as distinguished from those applicable to regional or system-wide activities.

From observations at many stations during the course of our field surveys and from discussions with carriers, it was determined that costs associated with certain functions performed at stations should be treated as system-wide costs, even though the carrier may have regarded them as direct station expenses in reporting quarterly to the Civil Aeronautics Board.

The following types of expenses incurred at stations, wherever it was practicable to do so, were treated as system-wide expenses:

Fueling	Dispatching
Cleaning aircraft	Aircraft communications
On-line mechanical work	Flight attendants
Pre-flight checks	Food service
Meteorology	Flight interruptions

Depreciation of ground property and equipment was transferred to the respective functional accounts when its was possible to identify the func-

tional activity using the equipment. When it was impracticable to obtain such information, such depreciation was trasferred to the maintenance function as the major portion was applicable to maintenance base and on-line maintenance activities.

The yearly amounts relating to pay roll taxes and employees' welfare insurance were allocated among the various functional activities before the cost of such activities were charged directly or allocated to the various stations.

It is evident, therefore, that, to facilitate charging direct expenses to stations and allocating system-wide expenses, a regrouping of all expenses was desirable for purposes of this report. According, expenses have been grouped hereinafter as follows:

a. Aircraft Operations
b. Direct Expenses
    (1) Aircraft landing and take-off (stop costs)
    (2) Other direct costs at stations
c. Allocated
    (1) Aircraft operations (cruise costs)
    (2) Ground operations
    (3) Aircraft control
    (4) Passenger service
    (5) Traffic and sales
    (6) Advertising and publicity
    (7) General and administrative

It would not be feasible to outline in detail in this report the many changes which were made in classification of expenses of each of the thirty-three carriers. It is believed sufficient to mention that every effort was made to identify and accumulate direct expenses of each station on as sound a basis as was practicable. Complete details of the changes made are shown in the work sheets turned over to the Committee.

a. *Aircraft Operations*

The functional activity "Aircraft Operations," for purposes of this survey, included direct flying operations, direct maintenance, depreciation of flight equipment, indirect maintenance and depreciation on maintenance equipment, plus pay roll taxes and employees' welfare insurance applicable to the amount of labor included in the respective functional accounts. Through this grouping it was possible to obtain the total cost of flying aircraft, exclusive of aircraft control activities.

In dealing with the problem of allocating costs incurred in aircraft operations among stations, various methods were carefully reviewed or tested; it was concluded that the most practicable approach to this problem was to segregate the costs associated with landing and take-off and those associated with the cruise between stops. Inasmuch as landings are made to generate revenue in or out of a station it was felt that each station should be charged with the average cost of making a stop.

b. *Direct Expenses*

(1) *Aircraft Landing and Take-off Costs (stop costs).* A formula was devised for computing the cost of making a landing and take-off during the year 1949 for each type of equipment. It was impracticable to obtain and analyze detailed flight data as to average altitudes flown, rate of descent

and climb, maneuver time, fuel consumption, etc., from each of the thirty-three carriers, and to develop separate costs for each. The matter was discussed, however, with eight of the trunk line carriers and with a representative of all of the local service carriers. As a result, basic data covering flight specifications during descent and climb were obtained for the type of equipment indicated from the following trunk line carriers: American—DC-3, CV-240, DC-4, DC-6; Capital—DC-3, DC-4, L-49; Colonial—DC-3, DC-4; Delta—D-C3, DC-4, DC-6; Eastern—DC-3, DC-4, L-49; National—DC-4, DC-6, LOD; Northeast—DC-3, CV-240, DC-4; and Northwest—202, B-377.

It was considered adequate for this survey to use the composite flight specifications of the above carriers and, with respect to the time elements indicated thererin, these figures were extended by an average hourly cost of operating each type of aricraft. Such hourly costs were developed by using the aggregate costs of direct flying (exclusive of fuel and oil), direct maintenance, depreciation of flight equipment and indirect maintenance of all carriers included in the survey. Fuel and oil consumption indicated by the composite specifications mentioned was costed specifically by using average consumption during descent, ascent and cruise, priced at an average cost per gallon. Complete details of the computations used in developing the cost of making a landing and take-off of each major type of equipment are shown in Exhibit "E" (not reprinted).

For purposes of simplicity in application, the derived unit costs shown in these summaries were adjusted to the nearest even dollar, thereby resulting in the following unit costs, which were applied to the number of departures made from each station for the entire year:

Trunk Line Carriers		*Local Service Carriers*	
DC-3	$ 10.00	DC-3	$ 7.00
LODESTAR	12.00	ALL OTHER	3.00
CV-240	29.00		
202	29.00		
DC-4	50.00		
DC-6	85.00		
CONSTELLATION	81.00		
B-377	150.00		

(Local service carrier stop-costs are lower because of a number of factors peculiar to their route patterns and procedures. Complete details were not available from each of the several local service carriers using airplanes lighter and smaller than DC-3's. However, certain analyses were made of pertinent data of two carriers and as a result an average cost of $3.00 was developed and applied for all equipment types in the lighter class.)

It should be recognized that elimination of stops would not result in savings equal to the unit stop costs shown, inasmuch as these amounts contain elements of continuing fixed costs. This point is emphasized to avoid application of such costs for purposes other than those intended in the survey. The scope of the survey contemplated allocation of costs among the stations served during the year 1949, and the unit costs shown were developed to assist in allocating a portion of flight costs in this manner.

(2) *Other Direct Costs at Stations.* For convenience in presentation, all direct station costs other than those associated with landings and take-offs were grouped into one total in the schedule "Summary of Operating Expenses." This category includes those expenses which had originally

been charged to the CAB functional accounts "Ground Operations," "Ground and Indirect Maintenance," "Passenger Service," "Traffic and Sales" and "Depreciation—Ground Property and Equipment," together with related pay roll taxes and welfare costs, less those costs which were transferred to the categories of aircraft operations and aircraft control.

The major portion of the remaining costs were those associated with activities of:

Local reservations	Mail handling
Ticketing	Cargo handling
Soliciting	Landing fees
Passenger handling	Local rentals

Local and system-wide expenses in each of the CAB functional accounts have been segregated based on results of field studies conducted at stations and by analyses of carriers' expense accounts.

c. *Allocated Expenses*

(1) *Aircraft Operations (cruise costs).* In allocating costs incurred in aircraft operations, such costs were segregated as to landing and take-off, and cruise. Unit costs attributable to making landings and take-offs have previously been described, and the total amount charged to stations of each carrier for this activity is shown under the heading "Aircraft Landing and Take-off" on the individual schedules "Summary of Operations Expenses." The amount so charged has been deducted from the total cost incurred in aircraft operations and the remainder allocated among stations. Thus, the total amount shown under the heading "Aircraft Operations" on the schedule "Summary of Operating Expenses" represents the remaining amount of aircraft operations expenses after costs assignable to landings and take-offs have been deducted.

In view of the significance of the remaining amount in relation to total costs of each carrier, special study was given to the problem of allocating this portion of aircraft operations expenses among stations. Consideration was given to use of both available revenue ton miles and actual revenue ton miles. Based on these studies and upon consideration of data available from carriers, it was concluded that use of revenue ton miles associated with each type of revenue assigned to stations would be the most appropriate basis for this purpose.

In studying the problem of allocating this type of expense, consideration was given to the use of available revenue ton miles for each flight, and the proration of such available revenue ton miles among stations, based on the composite load factors realized for flights serving each station. It does not appear possible to identify the ton miles available to each station as a basis for charging each station for cruise costs, due to inherent characteristics of air transportation involving space reservation for use at intermediate points and other matters which would influence the load factors generated at each station.

While it was impracticable to apply the principle of using available ton miles for each flight made by each carrier for the year 1949, tests were made whereby this principle was applied to over-all results of two carriers. The results of these tests showed that terminal stations would appear more profitable, and intermediate stations show greater losses, than when revenue ton miles were used as the basis of allocation of cruise costs.

In developing revenue ton miles for each station a factor was used for each type of revenue for each carrier, determined by dividing the carrier's

total revenue for each type of service into the reported corresponding revenue ton miles. The result represented the number of revenue ton miles carried for each dollar of revenue of each type of service. The factors developed were then multiplied by the respective amounts of revenue assigned to each station for passengers, mail, express, freight, excess baggage and nonscheduled transportation service. The resulting ton miles for each type of service were then accumulated and the ratio of the aggregate total for each station to the aggregate total ton miles reported by the carrier was used to allocate the portion of aircraft operations expense attributable to aircraft cruise.

(2) *Ground Operations.* Expenses associated with ground operations have been, as previously indicated, segregated between those purely local in character and those beneficial to system-wide activities. Local expenses have been included in the category "Other Direct Expenses" and have been charged directly to each station. The remaining ground operations expenses attributable to system-wide activities have been segregated as to those applicable to aircraft control and those associated with fueling, cleaning and pre-flight checks of aircraft. The latter expenses have been considered as system-wide, regardless of the location at which incurred, as they are associated with flight activities.

The basis of allocating fueling, cleaning and pre-flight expenses of each carrier was the number of departures made from each station. Where more than one type of equipment was used by a carrier, a formula was used to reflect recognition of the relative work loads created by each type.

This weighting formula was based on the average pay load weight of each type of aircraft, as furnished by the carriers:

DC-3	2.40 tons	Lodestar	1.50 tons
DC-4	6.25 tons	Constellation	8.70 tons
DC-6	7.00 tons	202	4.00 tons
CV-240	4.00 tons	B-377	9.40 tons

In application, the number of departures made by each type of aircraft was multiplied by the respective weights shown in the table. The results for each station were then divided by the aggregate total for all types of aircraft at all stations. The ratio of each station's total to the aggregate total of all stations was then used to allocate this type of expense.

(3) *Aircraft Control.* Expenses associated with aircraft communications, meteorology and dispatching have been segregated from the CAB functional classification "Ground Operations" and set up as a separate classification under system-wide expenses. This was done for purposes of allocating these expenses on a different basis than that used for other system-wide ground operations costs.

During discussions with personnel of various carriers during our field surveys at stations, it was indicated that expenses associated with aircraft control activities were closely related to the number of departures made from each station. Consequently, allocation of these expenses has been made based on the ratio of the number of aircraft departures of all types from each station to the total number of departures made from all stations.

(4) *Passenger Service.* Expenses reported to the Civil Aeronautics Board under the functional classification "Passenger Service" were, in most instances, taken in their original form, but for purposes of the survey were considered as system-wide expenses as they are associated with flight attendants, food, etc. The total amount of such expenses was allocated to

stations on the basis of the ratio of the amount of passenger revenue allocated to each station to the total amount of passenger revenue reported by the carrier.

(5) *Traffic and Sales.* Local expenses associated with traffic and sales activities were segregated and included under the category of "Other Direct Expenses." The remaining portion of the functional account to which traffic and sales expenses were charged consisted mainly of headquarters and regional office activities.

Wherever practicable to do so, such expenses were segregated as to type of service, i.e., passenger, mail, cargo and joint service. In instances where such segregation was possible, the amounts applicable to each service were allocated on the basis of the ratio of the amount of the respective type of revenue assigned to each station to the total amount of such revenue. The amount associated with joint service was allocated by using the total amount of transportation revenue as the common denominator.

(6) *Advertising and Publicity.* Expenses reported to the CAB as "Advertising and Publicity" were used as reported, except that no part of such expenses has been considered as being local in character even though some carriers have reported relatively small amounts as being charged to stations. The nature of these activities is such as to promote the interest of all types of service rendered by a carrier and, consequently, expenses associated with each activity are not susceptible to identification specifically by type of service. The ratio of total transportation revenue allocated to each station to the aggregate total reported has been used as the basis of allocation of this expense.

(7) *General and Administrative.* A portion of certain expenses originally charged to the general and administrative category by carriers, such as pay roll taxes and employees' welfare insurance, has been allocated to the respective functional accounts in the ratio of the amount of wages and salaries in each. The remaining amount has been allocated to stations on the basis of the ratio of the total amount of expenses allocated to stations to the total expenses of the carrier, exclusive of the amount of general and administrative expense to be allocated.

H. International "Stub Ends" of Domestic Carriers

Operating results of all of the international "stub end" stations (Section B, *supra*) have been included in this study, with the exception of the Honolulu station of Northwest Airlines, Inc. In this connection, it was found impracticable to analyze and reprocess all accounting entries made by this carrier for the year 1949 involving allocation of expenses between domestic and international services.

Unlike other carriers whose stub end stations were included in the survey, the international operation of Northwest Airlines, Inc., includes both the Honolulu segment and the Orient segment. In reviewing the carrier's allocation of expenses between domestic and international operations, it was found impracticable to analyze all accounting entries made to a series of expense pools in order to segregate revenues and expenses applicable to the Honolulu segment from those applicable to the entire international operation. No problems of this kind were encountered with respect to treatment of the Winnipeg, Canada, station of this carrier, as for internal accounting purposes and in reporting to the CAB this station had already been considered as a domestic station.

PART II — RECOMMENDATIONS RELATING TO PROCEDURES APPLICABLE TO FUTURE SEPARATION OF "SUBSIDY" REQUIREMENTS FROM COMPENSATORY MAIL RATE AND ALLOCATION OF PROFIT AND LOSS BY STATIONS SERVED

I. General

Certain problems encountered in developing the station profit and loss statements included in the Appendix disclosed the need for greater uniformity in reporting expenses and certain statistical data if future "subsidy" requirements of carriers are to be related to losses as computed for the individual stations.

Our recommendations comprise minor refinements in the classification of accounts and in statistical procedures to permit a ready and more accurate allocation of profit or loss by stations whenever it is found desirable to localize the "subsidy" requirements of any or all carriers. In addition, the principles of allocation outlined herein reflecting the results of operations of carriers geographically can assist materially in making economic studies of route patterns and segments.

To the extent practicable, our recommendations also provide for segregation of certain direct costs applicable to each type of service. However, our comprehensive study confirmed the original contention emphasized in our "Report Covering Preliminary Study of the Problems Involved in Separation of Subsidy from Mail Payments," issued January 18, 1950.[3] In this "Pilot Study" we stated that, because of the relatively high proportion of costs applicable jointly to all types of air transportation services, it was impracticable and unnecessary to effect complete specific cost separation by each type of service for the purpose of developing compensatory rates, or for separating "subsidy" from mail payments made to carriers.

By segregating the limited amount of direct costs applicable to passenger and mail service, as proposed herein, data would be provided to assist in the determination of uniform compensatory mail rates for all carriers. In our opinion, such rates should bear a relationship to the established first class passenger fare and, by making available the specific direct costs applicable to mail and passenger service, appropriate rate differentials which should exist between mail rates and passenger fares may be developed.

Inasmuch as passenger revenues comprise more than 85% of the total revenue of the carriers included in the survey, it would seem appropriate that only those cost variations which are recognized in the passenger rate structure need be covered in the compensatory mail rate structure, which applies to approximately only 6% of the total revenue. If the passenger rate structure be eventually refined to recognize the higher cost of short haul (because of enplaning, deplaning, added cost of landings, etc.) by the introduction of a fixed charge to cover those expenses not related to miles traveled, such refinement should also be reflected in the compensatory mail rate structure. This would automatically be provided for if the compensatory mail rate followed the passenger rate pattern, adjusted only by a differential excluding specific passenger expenses and substituting therefor exclusive mail service expenses.

J. Revision of the Uniform System of Accounts

Consideration of changes that might prove desirable in the CAB Manual, "Uniform System of Accounts for Air Carriers," involved study of the

[3] Reprinted, 17 J. Air L. & Com. 86 (1950).

various purposes for which a carrier's revenues and expenses should be segregated.

A proper classification of accounts should have certain objective purposes in segregation, such as:

1. Internal organization accountibility for revenues and expenses.
2. Type of activity
3. Location
4. Natural division
5. Managerial control
6. Ease in classification
7. Ease and equity in allocation

Some of the above reasons for segregation are purely internal and for a carrier's own needs, while others are influenced by requirements imposed by governmental regulation. The preparation of profit and loss statements to serve as the basis for future allocation of "subsidy" to the stations served at a loss and the segregation of direct expenses as to types of service create additional purposes for which the present classification of accounts was not intended.

In considering what, if any, changes might be needed to accomplish these latter objectives, it was concluded that it is inadvisable to revise existing functional and objective revenue and expense account groupings, as such revisions to meet the needs of added requirements weaken the effectiveness of the classification for other purposes.

It is our opinion that the new objectives created, calling for the development of compensatory mail rates and the allocation of "subsidy" to communities served can best be accomplished by the introduction of supplementary account numbers applicable to certain revenue and expense accounts as suffixes to existing account numbers.

It is common practice for many carriers to use sub-classifications in connection with the existing objective expense account classifications, and we recommend that certain of the more frequently used sub-classifications be incorporated into the existing CAB classifications, as follows:

29—Ground Service Employees
Flight servicing employees
Building Janitors and porters
Sky Caps
32—Ticketing and Reservations Employees
Ticketing employees
Reservations employees
35—Other Employees
Clerical
44—Rentals
Flight equipment
Buildings
Landing Fees
45—Aircraft Engine Fuels and Oils
Aircraft engine fuels
Aircraft engine oils

In treating a station as a cost center for accounting purposes, it becomes necessary to segregate and accumulate those expenses performed at this station, under the assumption that it is an independent unit in the carrier's system. The test in determining those expenses directly applicable to local activities is whether or not they would be wholly eliminated were the station to be discontinued.

Expenses incurred at a station which do not meet this elimination test would be beneficial to activities beyond the scope of local operations and should, therefore, be identified with regional or system-wide activities. All expenses incurred in flying operations and at headquarters, maintenance base and regional office locations should be considered as indirect expenses in relation to station activities.

With respect to treatment of the limited group of expenses directly applicable to types of service, only those incurred exclusively by types of

service as a practical matter can be considered in this category. The recommended supplementary classification of expense accounts consists of an additional digit suffixed to the existing CAB account numbers where practicable.

For purposes of reclassifying as system-wide expenses certain expenses which are incurred at stations, we suggest the use of the following suffixes:

7—Flying Operations
8—Flight Equipment Maintenance and Servicing
9—Aircraft Control

By use of the above accounts certain expenses now charged to CAB functional accounts "Ground Operations" and "Ground and Indirect Maintenance" and "Depreciation-Ground Property and Equipment" can be identified system-wide in the profit and loss allocation to stations.

To classify expenses which are directly indentifiable with a type of service, the following suffixes are recommended:

1. Pasenger
2. Mail Service
3. Cargo Service (Express and freight)

Using the preceding suffixes in connection with identification of expenses directly applicable to each type of service will more readily permit accumulation of such expenses in development of compensatory rates, etc.

K. Compilation of Revenue Statistics and Allocation of Revenues

1. *Passenger Revenue.* Origin and destination statistics covering the number of passengers carried between each pair of stations served by each carrier should be prepared monthly. Carriers providing coach service should prepare separate statistics covering the carriage of passengers in such type of service in addition to those prepared covering first-class service. Separate revenue accounts should be maintained for first-class and coach service.

The basis of reporting the number of passengers carried in each type of service shall be the ticket stubs from enplaned passengers. From analysis of such stubs the station at which a passenger first enplanes on a flight of a carrier shall be considered as the station of origin. The station at which a passenger ultimately terminates a journey on the same carrier's system shall be considered as the station of destination.

Passengers making routine transfers from one flight to another of the same carrier (on-line transfer) shall not be considered as enplaning passengers at the station of transfer. In connection with transfers of this type, regulations covering the reporting procedure to be followed should specify the period of elapsed time between flights before a passenger is considered as a lay-over passenger. Where the elapsed time between flights is greater than that indicated in the regulations, the passenger shall be considered as an enplaning passenger at the transfer point.

Whenever the occasion arises to determine operating results of stations, the respective statistics covering the number of first-class and coach passengers carried between each pair of stations should be priced at the value of a one-way ticket and extended to obtain the total amount of revenue generated between each pair of stations. The resulting amounts should then be added, both as to amounts shown for stations of origin and for stations of destination. By this procedure the computed amount of revenue for each station of origin would be identified with the respective stations of destination served from a station of origin. Likewise, the amount of computed rev-

enue for each station of destination would be identified with the respective stations of origin.

The sum of the total amounts of revenue generated out of and into a station should then be averaged. The resulting amount would represent the tentative amount of revenue (subject to adjustment mentioned later herein) for which the station would be credited. By following the same procedure for all stations the total tentative amount of revenue would be obtained. Averaging the amounts of revenue generated out of and into a station has the same effect as an equal split of revenue between the station of origin and the station of destination if such split were made on each individual ticket.

As mentioned in the preceding paragraph, revenues derived from application of the foregoing procedures are subject to adjustment in order to reflect various types of reduction in the value of one-way tickets used in computing the tentative amount of revenue. These reductions are associated with round-trip, family plan and excursion tickets.

To reflect these adjustments and to determine the amount of revenue assignable to each station, the tentative amount developed for each station should be reduced by the percentage of difference between the amount of revenue taken into account and the tentative amount previously described. Based on use of this method in developing profit and loss statements for the year 1949, the ratio of difference for most carriers should normally not exceed 5% of first-class passenger revenue. The adjustment necessary in the tentative amount of coach passenger revenue should be negligible.

2. *Mail Revenue.* The relative insignificance of mail revenue when compared to the total revenue of most carriers, particularly when using the prescribed compensatory rates, would not appear to warrant the effort and expense of preparing origin and destination statistical reports for the allocation of this type of revenue among stations. In instances where carriers regularly prepare such reports for other purposes, their use is suggested in lieu of the procedure recommended herein.

For those carriers which do not prepare origin and destination statistics covering the carriage of mail, it is recommended that the pounds enplaned and deplaned at each station be reported and accumulated monthly. In addition to accumulating the pounds enplaned and deplaned from mail manifests, provisions should be made by all carriers to permit substitution of a minimum in place of the actual weight of each load enplaned and deplaned in view of the possible application of minimum weight provisions in future computation of "compensatory mail pay."

The ratio of the pounds enplaned and deplaned at each station to the aggregate total of pounds enplaned and deplaned shall be the basis for allocating "compensatory mail pay" among stations. For carriers regularly preparing origin and destination statistical reports, the allocation of revenue is recommended in the ratio of revenue ton miles generated in and out of all stations.

Procedures applicable to preparation of monthly statements for the United States Post Office Department should be simplified, as the amount of detail now required appears burdensome, and further study of these procedures is recommended.

3. *Express Revenue.* The statement regarding the relative insignificance of mail revenue to total revenue of most carriers is equally applicable to express revenue. Consequently, for carriers which do not regularly prepare origin and destination statistics covering the carriage of express, it is

recommended that the pounds enplaned and deplaned shall be the basis for allocating the total amount of express revenue among stations.

For carriers regularly preparing origin and destination statistical reports, it is recommended that the allocation of revenue be based on the ratio of revenue ton miles in and out of each station, as developed from the statistical report, to the aggregate total revenue ton miles in and out of all stations.

4. *Freight Revenue.* Recommendations made in connection with treatment of express revenue likewise apply in allocating freight revenue among stations. However, as freight revenues become more significant in relation to total revenues, carriers should give consideration to development of origin and destination statistics for purposes of allocating this type of revenue among stations.

5. *Excess Baggage Revenue.* Excess baggage revenue is a relatively insignificant portion of the total revenue of carriers. This being the case, it is recommended that allocation of excess baggage revenue be based on the ratio of the amount of passenger revenue credited to each station to the aggregate total of passenger revenue.

6. *Revenue from Non-Scheduled Transport Services.* Revenues from charter service are not susceptible to treatment by means of allocation. Carriers' records covering this type of revenue should provide for identification of the stations to which credit shall be given in developing station profit and loss statements in the future.

7. *Other Transportation Revenue.* Wherever practicable, revenues from sources not previously mentioned should be identified, at the time of making entry, with stations benefitting from such revenues. Where it is impossible to make such identification, the amounts involved should be allocated on the basis of the ratio of other revenues credited to each station to the aggregate total of other revenues.

8. *Incidental Revenues-Net.* In recording amounts classified as incidental revenues, identification should be made with the stations benefitting from such income or expense or the functional account to which such income or expense should be charged or credited. The relative significance of the amounts involved should be weighed in determining their treatment.

L. Procedures for Reclassification of Expenses

The procedures outlined as to the supplementary classification of accounts will permit a carrier to segregate and reclassify those expenses incurred at a station location which are associated with flying operations and aircraft control activities from the expenses charged to stations under the CAB functional account "Ground Operations" (No. 6100). Likewise, depreciation on aircraft control equipment and expenses related to flight equipment maintenance and servicing can be segregated from station expenses charged to functional accounts "Depreciation—Ground Property and Equipment" (No. 6900) and "Ground and Indirect Maintenance" (No. 6200).

The amounts identified in this manner should be removed from the summary of each station's expenses and, for purposes of allocation, transferred to other classifications. The amount of those expenses identified with flying operations and flight equipment maintenance and servicing should then be added to the total amount of aircraft operations expenses included under the 5000 series of the CAB functional account classification. Those identi-

fied with aircraft control should be set up on the expense analysis work sheet under the category "Aircraft Control."

Local and system-wide expenses charged to stations under the CAB functional accounts "Passenger Service" (No. 6300) and "Traffic and Sales" (No. 6400) can be segregated, based on review of each of the objective accounts used in connection with these functions.

The total amounts charged to CAB functional account "General and Administrative" (No. 6600) under the objective account classifications "Insurance—Employee Welfare" (No. 57) and "Taxes—Payroll" (No. 68) should be allocated among the revised grouping of functional accounts on the basis of the relative amount of pay roll expense in each account. In this process special consideration should be given to situations where the amount of actual pay roll in any functional account is greatly in excess of the statutory limits against which pay roll taxes and insurance are assessed.

The amount remaining in the CAB functional account "Depreciation—Ground Property and Equipment" (not applicable to local station equipment and flight maintenance and servicing equipment) should be identified with the various other functional accounts by reference to the location of the equipment, or be allocated on some appropriate basis developed by the carrier.

After the above procedures have been followed in reclassifying expenses in each functional account and after direct expenses for stations have been removed therefrom, the remaining amounts in each account would be applicable to system-wide and regional activities, and would be subject to allocation among stations.

M. Allocation of System-Wide Expenses Among Stations

For purposes of allocating system-wide expenses (including those applicable to regional activities) among stations served, the following bases of allocation are recommended:

1. *Aircraft Operations*
   The total amount of expenses applicable to aircraft operations, including those transferred in accordance with the procedure outlined, should be allocated to stations on two bases.

   The first basis would consist of developing the average unit cost of making a landing and takeoff for each type of equipment used, and applying such unit costs to the number of actual departures made from each station by the respective types of equipment.

   The second basis would consist of prorating the remaining cost applicable to the cruise of all types of aircraft among the stations in the ratio of the total revenue ton miles of each station to the aggregate total revenue ton miles. (The number of revenue ton miles to be credited to each station for purposes of allocating aircraft cruise costs can be developed in accordance with the formula set forth in Section G 3 c(1) of this report.)

2. *Aircraft Control*
   The ratio of the total number of actual departures of all types from each station to the aggregate total number of departures.

3. *Ground Operations*
   The ratio of the weighted value of total departures made from each station to the aggregate weighted value of departures. (The weighting formula shall be based on the relative pay load weight of each type of aircraft.)

4. *Passenger Service*
The ratio of the amount of passenger revenue credited to each station to the aggregate total amount of passenger revenue.

5. *Traffic and Sales*
The ratio of the amount of transportation revenue credited to each station to the aggregate total amount of transportation revenue.

6. *Advertising and Publicity*
The ratio of the amount of transportation revenue credited to each station to the aggregate total amount of transportation revenue.

7. *General and Administrative*
The ratio of total expenses allocated and charged directly to stations to the aggregate total amount of operating expenses, exclusive of the amount of general and administrative to be allocated.

N. Accumulation of Direct Costs Applicable to Each Type of Service

Identification of the direct costs applicable to passenger, mail and cargo services by means of supplementary account codes at the time of assigning CAB account classification to vouchers, pay rolls, etc., will readily permit the accumulation of such costs for any accounting period. As indicated herein, the total amounts accumulated for passenger and mail services can be used in developing a compensatory mail rate.

O. Summary and Conclusions

From the procedures outlined in our report, profit or loss statements by stations of respective domestic carriers can be developed, to cover any specific accounting period, for the purpose of allocation of "subsidy" in proportion to the stations reflecting insufficient revenues to cover their "standard need" (the sum of their justifiably incurred expenses and the allocated portion of a reasonable return on their investment).

When uniform compensatory mail rates are established, following the recommended pattern, it is probable that some domestic carriers will not require additional payments. In such instances, with no "subsidy" in existence, the need for reflecting profit or loss by stations for distribution of "subsidy" will, of course, disappear. However, we wish to re-emphasize that procedures outlined in our report, reflecting geographical results of carriers, should prove of real worth in obtaining the "simple, dependable and understandable picture of the over-all problem and the domestic airline program" outlined by the Chairman of the Committee in his Interim Report of May 5, 1950, to the Senate Appropriations Committee.

As we have pointed out, the allocation of the over-all profit or loss of each carrier to the stations served, in relation to the revenues created at each station, is not, in itself, an exact determination, because of the interdependence of the stations and the consequent allocation of many of the operating costs which are of an indirect character for each airline system as a whole.

We feel, however, that the "standard need" requirements by stations of the respective carriers for the year 1949, as reflected in the Appendix, could serve as a reasonably accurate pattern for allocation of "subsidies" which may be appropriated in subsequent years, as long as the general route pattern, flight schedules, relative volumes of services rendered, etc., of the individual carriers remain substantially unchanged. Thus, it would seem

that the development of geographical allocation of profit and loss for the purposes of prorating "subsidies," to the extent they may exist in the future, could be done on a selective basis, developing new patterns of allocation only when material changes demand them, provided the carriers consistently conform to the procedures recommended in accumulating the necessary data.

It is our contention that the compensatory rates as finally determined by CAB should be such as to provide an incentive to the carriers toward efficient operation, yet such as to compensate them equitably for the services rendered. Since passenger and mail are the primary services, and are rendered jointly (passengers contributing more than 85% of the total revenue and mail approximately 6%), we believe that the compensation paid for both services should be related, varied only to cover the cost differential existing because of the exclusive passenger or exclusive mail costs involved. Therefore, starting with the first class passenger fare as a basis, a discount percentage should be developed to cover the approximate net amount of exclusive passenger costs, less additional mail handling costs. This percentage deduction from the passenger rate would reflect the uniform compensatory mail rate applicable to all domestic carriers. A reasonable minimum poundage of mail should be determined; the use of 100 pounds per trip would, in effect, be equivalent to the minimum passenger poundage envisaged under the half fare rate.

If passenger rate structures are refined in the future to recognize the increased cost of short hauls, or, conversely, to recognize the economies of long hauls, such refinement would automatically carry through to the mail compensatory rate if the latter is related thereto.

The compensatory rates prescribed for development of the statistics shown in the Appendix would not be subject to too much adjustment to conform to a more refined rate developed in accordance with our suggestions. Thus, the substitution of refined rates in place of those used in our study would not materially affect the basis for proration of the "subsidy."

STATE AND LOCAL

Department Editor: Madeline C. Dinu*

NASAO ACTIVITIES

TERMINAL type larger airports have constantly received a major share of interest in the past, from all levels of government, from industry and from the public. The proposal of such terminals is to provide facilities for air transportation from major points of potential,—the larger communities,—linking them with similar points elsewhere. For the healthy growth of any system, however, the need is for mass transportation of more people from smaller communities to their natural points of market and business areas and then into transcontinental and international traffic.[1] Consequently there was developed the national program of an airport system to include the smaller facilities.

In the past two years noticeable growth of industrial and agricultural use of smaller aircraft has brought about the awareness that minimum cost, small landing field or single-runway air strips should be an integral part of the over-all airport system. Efforts to include such a landing strip system under the Federal Airport Act program were nullified because of the excessive administrative and construction costs entailed for compliance with provisions of the Act and Regulations. It was hoped that a state agency could sponsor in one application and as one project the construction of from ten to twenty air strips, under standardized engineering plans and processing. Title to land requirements for each site, entering into lengthy project sponsorship assurances on each strip, maintaining a system of account for each location, and other requirements imposed, were so burdensome that they defeated the principle behind the idea.

The flying farmer is spearheading a movement for such strips, and he is usually ingenious and resourceful. In the majority of the states west and south of the Eastern seaboard, records show surprising increase of agricultural-use plane registrations.[2] To achieve highest percentage of use for such aircraft, landing and servicing facilities are needed. If they cannot be had under an over-all federal airport program, then they must be estab-

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[1] See American Aviation Daily 12/15/50—"AIR TAXI AGREEMENTS SIGNED BY AIRLINES," "The interline agreement between scheduled airlines and the National Air Taxi Conference of local operators to provide air taxi connections between airline stops and off-airline communities will become effective January 10, 1951. . . . The Agreement requires NATC operators, who now total 82 applicant members, to carry not less than $40,000 per passenger liability insurance and to meet certain standards of operation. Air Taxi operators, may use single or multi-engine aircraft, will at their own expense arrange airline reservations for passengers who request them; in turn, the airlines will pay expenses of arranging requested air taxi service and will collect a $10 deposit on the air taxi fare for the operator . . ."

[2] See *Annual Report of Montana Aeronautics Commission for* 1950, page 10; "There were 181 aircraft and 178 pilots registered with the Montana Aeronautics Commission for crop spraying operations in 1950. This shows an increase of 42% in the number of aircraft used, and an increase of 21% in the number of pilots. Figures for the previous year, now available, show that approximately 50% of the wheat lands in the state were sprayed, and it is estimated that the average yield per acre of wheat on crop land sprayed was 17.9 bushels and 14.9 bushels on crop land not sprayed, resulting in a 20% increase of yield due to weed control by the use of 2 4-D chemicals."

See: *Report of the Department of Aeronautics of Nebraska for* 1950, page 32; "There were 90 aerial applicators approved by the Department of Aeronautics

lished by local effort. This was commenced in the Western states, principally in the Idaho region,[3] and much impetus was gained recently by a program initiated by the Flying Farmers of Minnesota in the following recommendations:[4]

"It is recommended that the present state airport program be *strengthened* by providing a basic airstrip system of low cost, close in, landing strips in the small communities; this airstrip system to be *state owned.*
Reasons:

1. The low cost, close in, landing strip at the small community is an essential and necessary part of the total airport system to serve air transportation.
   (a) All airports, regardless of size, are dependent upon each other for the development of traffic.
   (b) The airports in the primary and secondary system will be strengthened economically by traffic flowing to and from them to the community airstrips.
2. Agricultural and industrial users of the aircraft require the prompt development of the low cost landing strips.
   (a) Aerial application of dusts and sprays is becoming a necessity in farming operations.
   (b) The airplane is becoming a farm management tool as well as a vehicle of transportation.
3. The system of low cost landing strips should be *owned* and *developed* by the *state.*
   (a) The small city or village does not have the tax sources or resources to either acquire or improve the needed landing strips.
   (b) The direct benefits to the local taxpayer from such a landing strip do not justify requiring such taxpayers to share the cost.
   (c) The user type revenues collected from 'little aviation' are and will be adequate to pay the costs involved.
   (d) The problem is state-wide rather than local in nature, requiring planning and execution at the state level in order to best serve the agricultural and industrial requirements.
   (e) The strips are required for emergencies of a state-wide nature—war, floods, catastrophies, search and rescue, internal security, etc.

"The following specific recommendations are made for the low cost landing strips of the basic airstrip system:

1. The landing strips should be within walking distances of the community and be located adjacent to an improved state or county highway.
   (a) Coordination between the Highway Department and the Department of Aeronautics in land condemnation would be required.
2. The strips would be about 2500 ft. long and about 400 ft. wide comprising a total land area of about 30 acres.

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during 1950 to engage in aerial crop dusting, spraying, seeding, fertilizing, etc., as compared to 68 approved during the 1949 season. This type of operation utilizes 166 aircraft and 210 commercial pilots as compared with 102 aircraft and 131 pilots last year. . . . There were 175 Federal waivers registered with the Department of Aeronautics, 14 for aerial photography, 25 for aerial power line patrol, 17 for newspaper delivery, 19 for hunting of predatory animals, 10 for banner towing, and 90 for aerial application of chemicals . . ."

[3] *Idaho Aeronautics Commission* prepared an excellent color, sound, film, entitled—"The Air Age"—depicting uses of aircraft for every day pursuits by Idaho ranchers and businessmen, and the construction of flight strips by community efforts on an "air-strip bee" basis, at costs ranging as low as $1,000 for completed strip.

See: *Oregon Air News, January,* 1951, published by the Oregon State Board of Aeronautics: "The Farm-to-Market airstrip plan shown on the map on the reverse side of this sheet (indicating 15 locations) is the proposed Farm-to-Market strip constructed program for the biennium of 1951-1953. . . ."

[4] See: *Recommendation to Efficiency in Government—Committee—Aviation Sub-Committee, dated November* 5, 1950, *presented by the Minnesota Flying Farmers.* Some of the recommendations have been put into legislative proposals for the 1951 General Sessions of the Minnesota State Legislature.

(a) Estimated average cost of land per site would be $6,000.

3. The strips should be leveled and crowned and have simple surface drainage, access to the highway, and a usable building area for low cost hangars.
   (a) Estimated average cost of improvements $6,500 per strip.
4. The strips should be state owned, but be maintained by the village, county or township.
   (a) Department of Aeronautics to prepare standard lease forms for use of landing strips.
   (b) Revenues from land rental or crops to go to village, to offset maintenance costs.
5. The program for the development of these strips by the Department of Aeronautics should be at the rate of about 10 each year—estimated total cost per year $125,000 to the state aeronautics fund.
6. The purchase of land by the state for airport purposes should be limited to landing areas of the single strip type which are to be a part of the state basic airstrip system."

These landing strips programs at the local level may well be the forerunner of a system of facilities for dual motor-vehicle/aircraft use by larger segments of the American public, in the light of recent strides forward in the field of convertible vehicles and small personal helicopter variations. While large jets and turbo-jets may be the future medium for long-haul air transportation, from investment standpoint for individual users of aircraft, his medium is directed at fulfilling his every-day needs at minimum costs and at his own "front-door."

Airports and their construction, involving not only engineering but legal aspects in many respects, were the subject of the full agenda prepared for the Joint Cooperative Committee, NASAO-Associated General Contractors of America, meeting in Boston, February 27, 1951. Items on the agenda were:

" I. Impact of defense program on Federal-aid airport construction.

II. Cut-back of Federal funds by Bureau of Budget from $36,700,000 to $21,200,000 and status of projects that were ready to be processed for construction but cannot qualify as defense jobs.

III. Progress on clarification of CAA policy regarding disputed final estimates.

IV. Responsibilities of CAA personnel on construction projects as related to suggestions and instructions to contractors.

V. Recent announcement by CAA on directives to be channeled through them to National Production Authority. Clarification on whether a sponsor may apply and receive directive prior to award of contract or wait until contract is awarded and then apply. Effect on bids when contractor has no assurance of supply of critical materials.

VI. Work of last Congress of importance to airport program.

VII. Clarification of S.1281 permitting CAA to provide up to 50% of the cost of land for airports. Can sponsors apply for the additional 25% reimbursement on land that has been purchased since May 13, 1946, or is the sponsor limited for reimbursement to projects that are under grant agreement and have not been finalled?

VIII. Bills now before Congress that require Joint Committee action.

IX. Possible relaxation of CAA requirements that sponsors clear zones of obstructions prior to receipt of any partial construction payments.

X. Consultant engineers' pay based on straight percentage fee. Should sponsor be reimbursed on costs for zoning plans and etc., as required by CAA?

XI. Progress on study of long-range financing for airport construction.

XII. National Defense plan to take over some civilian airports."

At the National Association of State Aviation Officials Executive Board meeting held in Washington, D.C. in February the Board voted that possession of CAA Airman Identification Cards should be mandatory; that these

cards be printed and issued at the earliest possible date; and that they include an anti-subversive statement or declaration, provided its inclusion would not delay printing and distribution of the cards. With respect to legislation introduced in the 82nd Federal Congress, the Board took the following action in general terms:

1) That the Association take no official position at the present time on any bills pertaining to separation of subsidy from airmail pay.

2) That the Association support legislation to repeal and/or reduce the tax on the transportation of persons and property.

3) That the Association actively support in principle the construction of heliports on or near new government buildings.

4) That the Association actively support legislation to eliminate overtime pay of customs, immigration and health department employees, providing it included all types of aircraft and aviation.

5) That the Association actively support legislation pertaining to the training of civilian pilots, technicians and mechanics (H.R. 1521, H.R. 1168, S.507, S. 325) but not to actively support H.R. 1301 to extend benefits of Servicemen's Readjustment Act of 1944.

A subject under research and study for several months at the University of Minnesota Law School of interest to state and municipal aviation authorities is that of the problem of removing damaged, derelict or abandoned aircraft from public airport premises. Involved are the federal and state laws on title to aircraft, police powers to remove aircraft and dispose of them at public sale, preservation of damaged aircraft held for investigations by both federal and state authorities, and related legal questions. Chief concern over these aircraft is the temptation to their use in flight by unauthorized persons, who, whether heedless of their own safety, have shown no responsibility to life and property on the ground. There is the correlated factor of safety at airports in removing such aircraft from areas needed for flight and servicing purposes. Motor Vehicle laws in the various states are more or less uniform in providing for removal from highways of such abandoned vehicles by the state police or other enforcement agencies, notifying the last known owner at his last known address, or by publication, and then disposing of the vehicles at public sale, with title firmed after lapse of a designated period. It is thought that some similar legislation may need to be enacted for aircraft of this category, and the study is to make recommendation on all aspects of the subject.

M. D.

JUDICIAL AND REGULATORY DECISIONS

Department Editor: Allen H. Meyer*

PRIMARY JURISDICTION OF THE CIVIL AERONAUTICS BOARD IN ANTI-TRUST CASES

IN the enactment of the Civil Aeronautics Act, Congress, in setting out to delegate the maintenance of general economic controls, ventured into the field of trade regulation.[1] Treating aeronautics as a "regulated industry" the Act takes the position that certain enumerated trade practices are unlawful, unless and until approval by the CAB is secured.[2] Among the specific practices to which the Act is directed are consolidations, mergers among carriers and acquisitions of control of other carriers (Section 408);[3] interlocking relationships (Section 409);[4] loans and financial aid (Section 410).[5] Section 411 authorizes the Board to issue a cease and desist order if it finds that a carrier is engaged in "unfair methods of competition";[6] Section 412 requires approval by the Board of all pooling and other agreements between carriers;[7] and Section 414 relieves any person affected by orders under Section 408, 409, or 412 from the operation of anti-trust laws.[8]

The extent to which the procedures and remedies set forth in the Act are conclusive of the role of CAB control over monopolies and conspiracies in restraint of trade in the air field has been brought to light in *S.S.W. Inc. v. Air Transport Ass'n of America, et al.*[9] Alleging violations of the Sherman[10] and Clayton[11] Acts, plaintiff, a non-scheduled[12] air carrier, charged such practices[13] as would appear to take the case out of the framework of the trade regulation provisions of the Civil Aeronautics Act, and prayed for relief in the form of an injunction and treble damages, the former being a rem-

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[1] 52 Stat. 977 (1938), as amended, 49 U.S.C. 401 et seq. (Supp. 1951).

[2] §401 of the Act, 52 Stat. 980 (1938), 49 U.S.C. §402 (Supp. 1951). In addition, statements of the legislative intent to regulate the air transport industry may be found in 83 Cong. Rec. 6507, 6628, 6728-6732 (May 9-16, 1938).

[3] 52 Stat. 1001 (1938), 49 U.S.C. §488 (Supp. 1951).

[4] 52 Stat. 1002 (1938), 49 U.S.C. §489 (Supp. 1951).

[5] 52 Stat. 1003 (1938), 49 U.S.C. §490 (Supp. 1951).

[6] 52 Stat. 1003 (1938), 49 U.S.C. §491 (Supp. 1951).

[7] 52 Stat. 1004 (1938), 49 U.S.C. §492 (Supp. 1951).

[8] 52 Stat. 1004 (1938), 49 U.S.C. §494 (Supp. 1951).

[9] 91 F. Supp. 269 (D.C.D.C. 1950). Presently on appeal to the Circuit Court (civil action No. 1332-49). Upon petition to intervene, the Circuit Court ordered consolidation with Air Transport Associates Inc. and Golden North Airways v. Air Transport Association of America, et al., which alleges substantially the same charges against the same defendants. A similar case is now pending in the New Jersey District Court, Slick Airways Inc. v. Air Transport Association of America (civil action No. 317-50), alleging substantially similar unfair and monopolistic practices against virtually the same party-defendants and praying for treble damage relief.

[10] 26 Stat. 209 (1890), as amended, 15 U.S.C. §§1-7 (1946).

[11] 38 Stat. 730 (1914), 15 U.S.C. §§12-27 (1946).

[12] It is worthy of note that the bulk of litigation alleging unfair trade practices in the air industry has been initiated by the scheduled carriers against the non-scheduled. Of course, these cases have been directed at predatory practices, rather than the monopolistic and restraint of trade practices alleged in the instant case.

[13] To take the allegations out of the specific language of §§411 and 412, if such sections are to be construed strictly as inclusive of only those practices set forth in express terms, the plaintiffs charged combinations and conspiracies to: hinder and prevent it from attaining sources of numerous ticket agencies; to discredit it and disparage it in the eyes of the public; by use of false and

edy available under Sections 411 and 412, if resort is had to the Board, but the latter being a remedy wholly without the scope of the Civil Aeronautics Act. Defendant's motion to dismiss rested on the grounds that the complaint raised administrative problems peculiar to the agency regulating the industry, and as such, was subject to the primary jurisdiction of the Board under Section 412. In the face of plaintiff's contention that the primary jurisdiction doctrine should not apply where the agency has no authority to enjoin the illegal practices charged or to award the damages prayed for, the district court dismissed on the dual grounds of administrative expedience and the authority of a comparable case arising under the industry regulated by the Shipping Board.[14] The main question raised by the *S.S.W.* holding is whether any of the above provisions, taken separately or collectively, requires the conclusion that the Board has primary jurisdiction in cases in which a conspiracy in restraint of trade, allegedly not within the framework or content of the prohibited practices, is charged. Stated another way, if the CAB is to have primary jurisdiction, the query is as to whether or not it follows necessarily, in the alternative, that there is to be exclusive jurisdiction in the Board which would serve to bar an anti-trust suit, or that there must be an exhaustion of administrative remedies, or that the cause should be held in abeyance until the Board determines complicated questions of fact. The *S.S.W.* court speaks in terms of neither primary nor exclusive jurisdiction, but arrives at a result indicative of either.[15] Resolution of this ambiguity necessitates an inquiry into what the Congress and the courts have intended by the use of such phraseology.

The history of the "primary jurisdiction" doctrine, based on judicial reluctance to intervene prematurely in administrative proceedings, as distinguished from the statutory prohibition under the "exclusive jurisdiction" doctrine, would seem to rest on its initial application by the Supreme Court in the *Abilene* [16] case. Here the court held that there could be no action to recover alleged over-payments of railroad rates until the ICC had first passed on the reasonableness of the rates. Extension of the doctrine in the field of

misleading statements: to eliminate and prevent competition for air carrier passenger and freight transportation; to offer transportation at cut prices until competition is eliminated; to obtain from gasoline and oil suppliers large quantity discounts not available to plaintiff; and to cause refusal and delay to it of vital maintenance and other services at airports.

[14] United States Navigation Co. v. Cunard Steamship Co., 284 U.S. 474 (1932). The *S.S.W.* court states that the Cunard case is "completely dispositive of the case" before it, despite the fact that the Cunard court talks in terms of both the primary and exclusive jurisdiction doctrines.

[15] Differentiation between primary and exclusive jurisdiction has resulted in much confusion, the reason being that the cases appear to use the terms interchangeably. The earlier non-antitrust cases usually spoke in terms of preliminary or initial jurisdiction. In the Cunard case (see notes 14 *supra*, and 38 *infra*) the court uses the phrase "exclusive primary." A strict reading of the S.S.W. opinion, in its acceptance of the Cunard case and its rejection of the contention that the case should be held in abeyance rather than dismissed, would lend weight to an argument that, having accepted "exclusive primary," but rejected a form of "primary," the role of the CAB is exclusive jurisdiction, a result not necessarily consistent with the Act itself.

The plaintiff in the *S.S.W.* case, relying on General American Tank Car Corp. v. El Dorado Terminal Co., 308 U.S. 422 (1940), argued that even if there were primary jurisdiction in the Board, the litigation should not be dismissed but that the court should merely have stayed its hand, and the cause held in abeyance, pending the conclusion of an appropriate administrative proceeding. The court granted the motion to dismiss, citing Armour & Co. v. Alton Ry., 312 U.S. 195 (1940), where the case was dismissed because there were complex transportation problems which first had to be determined by the Board, and held the El Dorado case inapplicable because there the primary jurisdiction point was not raised until after a decision on the merits.

[16] Texas & Pacific Ry. v. Abilene Cotton Oil Co., 204 U.S. 426 (1907).

railway transport is found in instances where the ICC was required to pass on whether a particular practice of routing was reasonable;[17] whether continuance of service on an industrial track without a certificate was discriminatory;[18] whether intra-state rates were discriminatory against inter-state commerce;[19] and whether an existing allotment of freight cars was discriminatory.[20] On the other hand, the court refused to invoke the doctrine where the only question was one of construction of a tariff,[21] or otherwise a question of law.[22]

In the field of air transport, primary jurisdiction has been invoked and adhered to quite rigorously. In *Trans-Pacific Airlines v. Hawaiian Airlines* [23] where the plaintiff, a scheduled airline, sought an injunction against a non-scheduled airline, alleging that its operation without a certificate rendered it guilty of unfair methods of competition, the 9th Circuit has ruled that the district court should have held the cause in abeyance until the Board made a preliminary determination.[24] The language in *American Airlines v. Standard Airlines*,[25] based on similar facts, is somewhat more ambiguous. Here the court held jurisdiction to determine whether a letter of registration, exempting defendants from the requirement of a certificate, was still in effect is "at least initially with the Board." In *Adler v. Chicago & Southern Airlines*,[26] the court dismissed an action for breach of contract for cancellation of a flight, because there had been no allegation that the CAB has passed on the reasonableness of the cancellation, leaving open the question of what result would ensue had the Board acted on the reasonableness.[27]

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[17] Northern Pacific Ry. Solum, 247 U.S. 477 (1918).

[18] Texas & Pacific Ry. Co. v. Gulf, Coronado, & Santa Fe Ry., 270 U.S. 266 (1926).

[19] Board of R. R. Comm'rs v. Great Northern Ry., 281 U.S. 412 (1930).

[20] Baltimore & Ohio Ry. v. U.S., ex rel. Pitcairn Coal Co., 215 U.S. 481 (1910).

[21] Great Northern Ry. v. Merchants Elevator Co., 259 U.S. 285, 291 (1921). Here the court held that the answer depended upon "the character of the controverted question and the nature of the enquiry necessary for its solution," and concluded that the doctrine should not apply where there is involved only a pure question of law.

[22] Illinois Central Ry. v. Mulberry Hill Coal Co., 238 U.S. 275 (1915). (The allegation was a violation of a statute requiring a railroad to furnish cars within a reasonable time); Pennsylvania Ry. v. International Coal Mining Co., 230 U.S. 184, 196 (1913). (Question was the unlawfulness of a departure from published rates); Louisville and Nashville Ry. Co. v. F. W. Cook Brewing Co., 223 U.S. 70, 84 (1911). (Question was the duty of carriers to transport intoxicating liquors.)

[23] 174 F. 2d 63 (9th Cir. 1949).

[24] This case overturned the lower court holding in Hawaiian Airlines v. Trans-Pacific Airlines, 78 F. Supp. 1 (D. Hawaii 1948) in which the defense of primary jurisdiction was rejected. The argument of primary jurisdiction was also rejected in a recent suit by the Government for injunction under the Sherman Act, United States v. Inter-Island Steam Navigation Co., et al., 87 F. Supp. 1010 (D. Hawaii 1950), but the lack of jurisdiction of the Board rested on the fact that the acquisition of control was accomplished prior to the effective date of the Civil Aeronautics Act.

[25] 80 F. Supp. 135 (S.D.N.Y. 1948).

[26] 41 F. Supp. 366 (E.D. Mo. 1941).

[27] The holding of this case was severely criticized in Schwartzman v. United Airlines, 6 F.R.D. 517 (D.C. Neb. 1947), where the allegations were substantially the same. Perhaps dismissal in the Adler case was based on the defective complaint. The opinion is not clear on this point.

The Adler case has been distinguished as a case involving reasonableness in Pacific Northern Airlines v. Alaska Airlines, 80 F. Supp. 592 (D.C. Alaska 1948). Here the allegation was that the defendant was engaging in too many flights to be considered an irregular carrier, and an injunction was sought to enjoin the defendant from operating without a certificate. In taking jurisdiction, the distinction drawn by the court was that this case involved a violation of a lawful provision of the Civil Aeronautics Act, and not the reasonableness of a provision.

Apparent from the language of the courts is a judicial approach evidencing a desire that the administrative agency, ostensibly the more particularly adapted by virtue of its expert knowledge, personnel, procedure, and experience, not the courts, should execute the function of dealing with the complexities delegated to it.[28] It is worthy of note, however, that although the courts speak in terms of primary or initial jurisdiction in the agency, there is no indication that the jurisdiction is exclusive. Nor is there any language, even in the *Adler* case where the word "dismiss" is used,[29] to the effect that once the agency determines the facts in favor of the complainant, he could not then maintain a suit, nor that he cannot secure the relief he seeks. In the *S.S.W.* case, the court, in dismissing the argument that there is jurisdiction in addition to or beyond that of the Board, relied upon a comparable anti-trust case under the Shipping Board, which in turn had relied on a case arising under the jurisdiction of the ICC.

The first anti-trust cases in which the Supreme Court appears to have applied the primary jurisdiction doctrine in regulated industries were those arising under the ICC.[30] In *Keogh v. Chicago & North Western Ry.*,[31] a treble damage suit under the Sherman Act, plaintiff shipper alleged a conspiracy between the carrier and the other shippers to eliminate competition by charging arbitrary and unreasonable rates, higher than those likely to be charged if competition had been maintained. Although cited for the doctrine,[32] the effect of the court's decision on the primary jurisdiction issue is not clear. The court, holding that mere extraction of a higher rate than would have otherwise prevailed was not a violation of the plaintiff's legal rights, inasmuch as the Commission had already approved the rate, merely pointed out that even if the rate had not been approved, a treble damage action could not be maintained because recovery would result in an unfair advantage to the plaintiff; that the only remedy in rate cases was before the Commission, to recover the excess paid. Such finding of a full and adequate remedy under the ICC Act would serve to further the argument that the remedy available is exclusive, rather than primary. In *Terminal Warehouse v. Pennsylvania Ry.*,[33] on a similar allegation of conspiracy, the court held that discriminatory privileges and payments, without more, would not make out a combination in restraint of trade within the Sherman Act, repeating the theme that the sufferor of discriminatory rates has a remedy in damages before the ICC. However, the court went on to say that, in holding that a sufferor from discriminatory rates must in the first instance resort to the Commission, it did not intimate that a common carrier could never, by discriminatory rate agreements, be deemed a party to a conspiracy in restraint of trade with resultant liability. On the contrary, the court stated that resort to the Commission would not be necessary if there was alleged a conspir-

[28] For another treatment of the origin and reasons behind the "primary jurisdiction" doctrine, see Note 51 HARV. L. REV. 1251 (1938).

[29] See Note 27 *supra*.

[30] The argument of primary jurisdiction in other regulated industries has been rejected in United States v. United States Alkali Export Assn., 58 F. Supp. 785, 787 (S.D.N.Y. 1945), affirmed 325 U.S. 196 (1945), (FTC may investigate violations of the Sherman Act, notwithstanding exemptions under the Webb-Pomerene Act); United States v. Socony-Vacuum Oil Co., 310 U.S. 150 (1940) (the Petroleum Administrative Board may not authorize price-fixing violative of the Sherman Act); American Tobacco Co. v. United States, 147 F. 2d 93 (6th Cir. 1944), affirmed 328 U.S. 781 (1946), (rejected the sanction by the Department of Agriculture).

[31] 260 U.S. 156 (1922).

[32] The Keogh case was cited in the Cunard case for the proposition that the doctrine did apply to anti-trust cases.

[33] 297 U.S. 500 (1936).

acy to monopolize to the destruction of the plaintiffs.[34] Insofar as the *Keogh* and *Terminal Warehouse* cases are unfair trade practice actions by shippers against carriers, it might be argued that such cases are not conclusive of actions in which the parties are carriers exclusively, as in the *S.S.W.* case. It is not surprising, however, that in the railroad field, no cases may be found [35] in which carriers attempt to invoke the courts against other carriers. The element of non-scheduled operations in the air field, lends itself more readily to the higher incidence of unfair intra-industry competition activities than are to be found among railway carriers. A further authority not to be overlooked in this area is the effect of the holding of *Georgia v. Pennsylvania Ry. Co., et al.*[36] Faced with the question as to whether State could sue for treble damages and an injunction against an alleged conspiracy to establish a discriminatory rate system, the court held first that, on the basis of the *Keogh* case, there is no action for damages for the charging of specific rates previously approved by the ICC. On the injunction question, the court held that even though the carriers were subject to the regulation of the ICC, the conspiracy alleged was within the proper jurisdiction of the courts in the first instance. Plaintiffs in the *S.S.W.* case relied on the dicta in the *Georgia* case to the effect that the aspect of conspiracy is sufficient standing alone to bring the charges within the Sherman Act. On the other hand, the defendants argued that the primary jurisdiction doctrine, as approached in the *Georgia* case, would be inapplicable only if the administrative agency was completely lacking in power to deal with the subject of the action, and that Sections 411 and 412 were adequate to indicate control by the Board over the activities.

The *Keogh* case was the main authority relied upon by the Supreme Court when it came to grips with the primary jurisdiction question under the Shipping Act.[37] In *United States Navigation Company v. Cunard*,[38] the only case in point cited in the *S.S.W.* opinion, the court was dealing with a combination and conspiracy to restrain trade in the carriage of general cargo, allegedly outside the scope of the jurisdiction of the Shipping Board. Unlike the instant case, the prayer sought only injunctive relief, without any attempt to gain damages. In dismissing the suit, however, the *Cunard* court stated in ambiguous terms that the matter fell "within the *exclusive primary* jurisdiction of the Shipping Board." [39] (Emphasis added.) The *S.S.W.* court, however, did not go so far as to use words of "exclusiveness" but deemed the jurisdiction to be "primary." Even though it is difficult to ascertain whether courts rely more heavily on a natural self-indulgence not to interfere with administrative action in regulated industries, or on the statutory provisions of that particular legislation, in order to reconcile or distinguish these holdings, it is necessary to analyze the organic legislation upon which the courts seem to be operating.

Although the language of Section 412 of the Civil Aeronautics Act is sub-

[34] *Cf.* Meeker v. Lehigh Valley Ry., 183 Fed. 549 (2nd Cir. 1910). Although not cited in the Terminal Warehouse case, the holding here was that where the allegation was a conspiracy to monopolize interstate trade in anthracite coal by increasing freight charges to the point of driving the complainant out of business, there was a cause of action under the Sherman Act separate and distinct from the Interstate Commerce Act, even though there was involved an increase of freight rates, the reasonableness of which had to be passed on by the ICC.

[35] *Cf.* Texas & Pacific Ry. Co. case, note 18, *supra*. The allegation here was only that an extra industrial tract was being maintained without a certificate. This falls short of serving an injunction against a railroad to prevent it from operating.

[36] 324 U.S. 439 (1945).

[37] §15, 39 Stat. 733 (1916), 46 U.S.C. §814 (1946).

[38] 284 U.S. 474 (1932).

[39] 284 U.S. 474, 485 (1932).

stantially the same as that of Section 15 of the Shipping Act,[40] which was held the basis for the Board's jurisdiction over anti-trust cases in the *Cunard* case, and to Section 5 of the Interstate Commerce Act,[41] there are three major points of distinction. First, the CAB, unlike the Shipping Board and the ICC,[42] has no power to award damages of any sort.[43] This fact stands as contradictory to the conclusion at which the *S.S.W.* court arrived, for the purpose of analogizing the *Cunard* case, that the Civil Aeronautics Act gives to the CAB "far broader powers than the Congress saw fit to rest in the Shipping Board." [44] Yet, even if the court were correct on this point, Congressional intent on reasons for not expressly affording such additional relief can be argued on either side. The inclusion of certain remedies automatically presupposes an intent to exclude all others and, therefore, no outside modes of relief are available. On the other hand, Sections 411 and 1106 of the Civil Aeronautics Act (the second and third points of distinction, *infra*), when read in light of broader purposes of more liberal statutory construction, would lead to a contrary conclusion.

No provision similar to Section 411 is to be found in either of the other two acts. It might be argued that a provision which allows the Board to issue orders to cease and desist from unfair methods of competition, giving it a great deal more regulatory control than either the ICC or the Shipping Board, is tantamount to saying that such expanded method of relief is exclusive. However, it is significant that Section 414 relieves from the operation of the Sherman Act persons affected by orders under 408, 409, and 412, but makes no reference to 411. The regulatory sections covered by 414 all require approval by the Board. On the other hand, under 411, the Board may disapprove of what it considers to be unfair trade practices irrespective of what it may have approved. Although no merger, consolidation, interlocking relationship or pooling agreement is subject to anti-trust laws, it does not follow necessarily that a conspiracy to restrain trade, certainly an unfair trade practice which the Board is authorized to enjoin, would be entitled to the same exemption as that which has been affirmatively approved by the Board. Thus by not including 411 within the scope of the exemptions stated in 414, it could be argued that Congress has left that much of the field not providing for affirmative approval by the Board free for consideration by the courts. Although not raised in the *S.S.W.* case, if the plaintiff had argued that Section 411, not protected by Section 414, was thus subjected to the anti-trust laws, this standing alone would not have created a cause of action for damages where the Section itself, even if relieved from necessity of initial or exclusive resort to the Board, provided for a cease and desist order only. Necessary as a second step would be a reading of Section 411 as overlapping into the Sherman Act. In *Federal Trade Commission v. Cement Institute*,[45] where the allegation was a violation of Section 5(a) of the Federal Trade Commission Act,[46] the Supreme Court held that a proceeding be-

[40] See note 37, *supra*.

[41] 24 Stat. 380 (1887), 49 U.S.C. §5 (1946).

[42] §8, Interstate Commerce Act; 24 Stat. 382 (1887), 49 U.S.C. §68 (1946), and §22 of the Shipping Act, 39 Stat. 736 (1916), 46 U.S.C. §821 (1946) provide that the Commission and the Board can direct payment of full reparation to the complainant for injury caused by violations of the Act.

[43] In an action before the CAB, for damages for disruption of petitioner's schedule, the Board stated that it is without authority to award damages, but the remedy rests entirely within the province of the courts. Page Airlines, Inc., 6 CAB 1061, 1066 (1946). See also Hawaiian Airlines v. Trans-Pacific Airlines, 78 F. Supp. 1, 6 (D. Hawaii 1948).

[44] S.S.W. v. Air Transport Association of America, 91 F. Supp. 269, 271 (D. C. D. C. 1950).

[45] 333 U.S. 683 (1948).

[46] 38 Stat. 717 (1914), 15 U.S.C. §44 (1946).

fore the FTC was not barred by a suit by the government in the federal courts for a violation of the Sherman Act. If the conduct alleged is a combination or conspiracy in restraint of trade, it will violate both the Sherman Act and the Federal Trade Commission Act; thus, proceedings under both Acts were held to overlap. Inasmuch as the language of Section 411 is virtually identical to that of Section 5(a) of the Federal Trade Commission Act, it could be argued that the Civil Aeronautics Act should not preclude the bringing of an anti-trust suit, at least when Section 414 is not applicable, any more than do the provisions of the Federal Trade Commission Act.[47]

The third factor as a possible distinction between the *Cunard* result and a plaintiff's argument outside the Civil Aeronautics Act rests in the rarely invoked Section 1106.[48] Although a similar section is found in the Interstate Commerce Act (Section 22),[49] no such provision is found in the Shipping Act. The court mentioned this fact in the *Cunard* case, and indicated that the absence of a "remedies not exclusive" provision in the Shipping Act made a stronger case for applying the "exclusive primary jurisdiction" doctrine in Shipping Board cases than in ICC cases. However, the application of the primary jurisdiction doctrine in the face of this provision in the Interstate Commerce Act does not seem to be controlling upon the *S.S.W.* case for two reasons. First, persons affected by any order under the trade regulation sections of the Interstate Commerce Act are exempt from operation of anti-trust laws, whereas persons affected by orders under Section 411 of the Civil Aeronautics Act are not so relieved. Secondly, in the *Abilene* case, the court construes Section 22 of the Interstate Commerce Act as not "continuing in shippers a common law right, the continued existence of which would be absolutely inconsistent with the provisions of the Act." The court continued, "In other words, the Act cannot be held to destroy itself." [50] It could be argued that the anti-trust remedy sought by complainants in the *S.S.W.* case is a statutory remedy and does not appear to be "absolutely inconsistent" with or to destroy provisions of the Civil Aeronautics Act, but rather appears to be in addition thereto.

To date, Section 1106 has been held not to abrogate existing remedies outside the Act. In *Smithdeal v. American Airlines*,[51] which was a suit in tort for nuisance caused by low flying planes, the court, using Section 1106, held that nothing in the aviation act, either state or national, requires a citizen to seek first and specified administrative remedies. In *Mack v. Eastern Airlines*,[52] the holding that Section 1106 did not preserve existing contrac-

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[47] A significant distinction may lie in the fact that the FTC has no power of approval while the CAB has that authorization under both §§408 and 412. However, the fallacy in the S.S.W. court's approach is its reliance on an argument that actions under those sections fall within the exemptions under §414. The plaintiff's contention could have rested on §411, as not excluded under §414. A further distinction between the FTC Act and the CAA Act lies in the fact that the CAB, unlike the FTC, can reach only present and future acts, while the allegations in the S.S.W. case are directed at past violations.

[48] 52 Stat. 1027 (1938), 49 U.S.C. §676 (1946). "Remedies not exclusive: Nothing contained in this chapter shall in any way abridge or alter the remedies now existing at common law or by statute, but the provisions of this Act are in addition to such remedies."

[49] 24 Stat. 387 (1887), 49 U.S.C. §22 (1946).

[50] Texas & Pacific Ry. v. Abilene Cotton Oil Co., 204 U.S. 426, 446 (1907).

[51] 80 F. Supp. 233 (N. D. Texas 1948).

[52] 87 F. Supp. 113 (D. C. Mass. 1949). This was an action for damages by a passenger bound from Washington to Boston; defendant did not transport him beyond New York. Pursuant to §403 of the Civil Aeronautics Act, defendant had published Rules Tariffs, which, among other things, provided that the carrier should not be liable for failure to operate a flight according to schedule.)

tual obligations [53] emphasized that only remedies existing by some other statute are preserved by the Section. It may be argued that this language, as applied to tort and contract cases may be too broad to be conclusive upon anti-trust cases, inasmuch as the Civil Aeronautics Act does not concern itself expressly with simple tort or contract cause of action, but does purport to invade the public law of trade regulation. However, such treatment of remedies outside, yet not inconsistent with the Act, is an indication that the language of Section 1106 is not merely illusory. It would seem to afford considerable basis for concluding that notwithstanding any provision of the Civil Aeronautics Act, which does not purport to create exclusive, as distinguished from merely primary jurisdiction,[54] there is still a remedy available.

The holdings under Section 1106 would indicate a tendency on the part of the courts to consider the outside remedy appropriate if it is one emanating from the common law, as distinguished from statutory, even though reference to both is made in the Section. If true, however, recourse may be had more readily for actions for damages under common law restraints of trade in the state courts, to the extent that charges are of an intra-state nature. There again, the defense of primary jurisdiction in the state commissions would be raised, but the success of such a contention would rest upon the extent to which the states have legislated on the subject of such economic controls and how inclusive are the powers of the commissions. Assuming, however, the limited scope of intra-, as compared with inter-state activities in air commerce, the desirability of treble damages over those compensatory, and the absurdity of such a distinction between statutory and common law damages, a resort to the Sherman, Federal Trade Commission, or Clayton Acts would seem advisable. Of the three, only the Sherman Act is devoid of any reference to indicia of relief other than those available in the courts. If exemption from the operation of one Act implies jurisdiction under another, the organic statute of the agency, both the Federal Trade Commission and Clayton Acts,[55] containing references over, would preclude action outside the Board. For this reason, the *S.S.W.* court had firmer grounds upon which to reject plaintiff's claim under the Clayton Act.

How far the courts would stretch to create a remedy of treble damages, whether on the "fireside equity" of comparing aeronautics with other regulated industries, on the theory of overlapping created by the *Cement* case, or on a reading of Sections 411 and 412 with 1106, is as yet undetermined.[56]

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[53] *Cf.* Schwartzman v. United Airlines, note 27, *supra*. The Mack case expressly overruled the Schwartzman case insofar as the latter had held that contractual obligations existing prior to the Civil Aeronautics Act were preserved.

[54] See note 15, *supra*.

[55] §7 of FTC Act, 38 Stat. 717 (1914), 15 U.S.C. §45 (1946). §7 and §11 of Clayton Act, 38 Stat. 730 (1914), 15 U.S.C. §19 (Supp. 1950).

[56] The problem is further confused by the recent holding in United States v. Far East Conference, *et al.*, 94 F. Supp. 901 (D. C. N. J. 1951). In a Sherman Act proceeding brought by the government, charging the association and individual defendant water carriers with a conspiracy comparable to that alleged in the S.S.W. and Slick cases (note 9, *supra*), the district court rejected the primary jurisdiction argument. In attempting to distinguish away the Cunard case, the court indicated that, unlike the government, the private litigant had "an enforceable right and an adequate remedy under the Shipping Act." 94 F. Supp. 901, 904. If the distinction rested only upon the fact that the private litigant may secure treble damages under the Sherman Act, there was no need to discuss the Cunard case, for no such prayer for relief was made there.

Assuming that a distinction can be made, the Slick case, arising in the same Circuit as the Far East Conference case, may follow either view on the issue of the S.S.W. case. On the other hand, submitting that no such distinction is tenable, the Slick court will be forced to face a direct conflict between the Far East Conference and the S.S.W. holdings.

The argument of primary jurisdiction, if it prevails, may well serve as a device by which to cloud the basic issue of monopoly versus competition in a regulated industry. Neither the CAB, whose holdings are not consistent,[57] nor the congressional intent [58] afford an effective rationale. The fact that every certificate issued in effect creates a monopoly serves only to contradict the express language of the Act purporting to enforce some degree of competition.[59] If the Civil Aeronautics Act continues to leave open to litigation problems of jurisdictional questions, the conflict, if oppressive on the courts can be reconciled only by further interpretation from the Congress.

[57] Competition in air transport is not mandatory. When considered in relation to any particular route or service, it is within the discretion of the CAB to determine whether competition is necessary in the sound development of the air transport system. Application of Colonial Airlines, 4 CAB 555 (1944); Application of American Airlines, 2 CAB 16 (1940). The Board has held that it could approve consolidations tending to restrain competition if in the public interest. Application of Braniff Airways, 2 CAB 739 (1941); Application of Pan-American Airways, 1 CAB 215 (1940). The Board has also held that it could not approve a consolidation which will prevent competition. Application of Wien Alaska Airlines, 3 CAB 207 (1941).

[58] See note 2, *supra*. Language is to the effect that the congressional intent was to safeguard against the evils of unrestrained competition and the consequences of monopolistic control.

[59] §408(b), 1st Proviso: "Provided that Board shall not approve any consolidation, merger, or acquisition of control which would result in creating a monopoly and thereby restrain competition." 52 Stat. 1001 (1938), 49 U.S.C. §448(b) (Supp. 1951).

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IN this effort Mr. Malkin obviously has not tried to write a scholarly textbook but rather has put together a comprehensive "popular" presentation of the air cargo industry. The first half of the book is probably only of casual interest to the student of air transportation as it is the author's reporting of ventures in the promotion of the carriage of freight by air. It is to be hoped that some businessmen readers may be inspired to investigate the possibility of advantage to their enterprise that might accrue from moving their supplies or products by air.

Not until the second half of the book is the student of air transportation rewarded, but then handsomely, as he reads about the freight forwarder and his troubles in a chapter entitled "Meet Mr. Middleman" and the nonscheduled operator in "Enter the Nonsked." Both of these chapters on recent air cargo history are lucid and readable and offer an interpretation based upon the author's familiarity (he is managing editor of *Air Transportation*) with the controversies discussed. Other chapters on problems of flying the mail, terminals and packaging, express and the future freight possibilities of helicopters can further the student's knowledge in a practically painless manner thanks to the fluid journalistic style of the author and his liberal use of well-chosen photographic illustrations.

C. T. L.

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E. C. S.

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